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Two New Books

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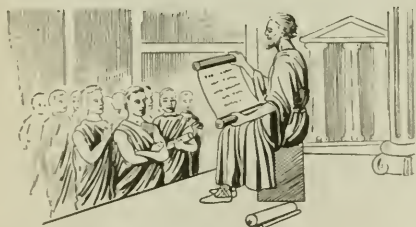
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SURGERY.

EMPHYEMA.

Six articles (*Ann. of Surg.*, July, 1920) by Drs.
ASHHURST, BUNTS, MARTIN, HENER, LILIENTHAL,
OCHSNER and SCHNEIDER furnish an excellent sym-
posium on this subject.

Ashmurst's article of 53 pages is well presented,
graphically illustrated by cuts and case reports. His
summary is concise.

Bunts deals with the disease in young adults. Mar-
tin writes mostly of the etiology and Hener on the
treatment of the chronic forms.

Ochsner's paper is not strictly on emphyema, but
rather of post-operative pulmonary thrombosis.

[E. H. R.]

SURGERY OF CANCER OF THE LARGE INTESTINE.

BACON, A. D. (*Jour. A. M. A.*, July 31, 1920) writes
a very clear and concise article on this subject. He
emphasizes the importance of careful pulmonary
x-ray work, the advantages of the two-stage opera-
tion when there are any symptoms of obstruction, the
advantages of lateral anastomosis of the large bowel
over any other technic, the technic of colostomy and
its later closure and the general operative technic of
removal. The article is a valuable one.

[E. H. R.]

ROENTGENOGRAPHIC APPEARANCE, DIAGNOSIS, AND PATH- OLOGY OF SOME OBSCURE CASES OF BONE LESIONS.

LOVETT, R. W., AND WOLRACH, S. B. (*Surg., Gyn.,
and Obstet.*, August, 1920) present a beautifully illus-
trated article, presenting many detailed case reports
and pathological examinations. They state that the
diagnosis of infectious lesions of the bones would be
simple if each infectious agent always produced the
same reaction. The pyogenic bacteria alone may be
counted on to conform to type. This is represented
by primary destruction followed by repair and new
bone formation.

Syphilis effects bone in two ways: both effects of
the proliferative reaction of the causal agent and re-
sults either in bone destruction or the new formation
of bone. Tuberculosis presents a more varied picture.
The lesson to be drawn from a study of the series
is the reminder that tuberculosis in bone may simu-
late any other infectious process in location and
character of the lesion. Diagnosis, therefore, from
x-ray studies alone is occasionally impossible and
recourse must be had to other clinical evidence and
when possible, to pathological examination. This is
well illustrated by case reports.

The article is one of distinct value and interest.

[E. H. R.]

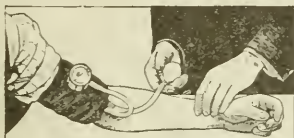
AMPUTATION OF THE LEG.

BORCHGREVNİK, O. (*Ann. of Surg.*, June, 1920) dis-
cusses learnedly the weight-bearing surfaces in am-
putated lower legs, and strongly advocates the removal
of the head of the fibula to improve the distribution
of weight-bearing surface. He describes in detail his
method of removal. Stumps thus treated are non-
tender and prostheses need less constant attention.
The procedure seems rational.

[E. H. R.]

(Continued on page vi.)

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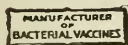
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(Continued from page...)

CLINICAL MANIFESTATIONS OF INFECTION OF THE LATERAL SINUS.

EMERSON, F. P. (*Jour. A. M. A.*, Aug. 7, 1920) states that sinus infection should be used as a comprehensive term covering three subdivisions: phlebitis, thrombosis, and septicemia. The symptoms vary with the infecting organism, the avenue of invasion, stage of complication, and resistance of the host. The diagnosis can be made only by a study of the history, local conditions and blood findings. There is no typical picture. In septic cases with bacteriemia, all the symptoms of meningitis may be present. [E. H. R.]

REPORT OF THE CONDITION OF A CASE OF COMPLETE DIVISION OF THE SPINAL CORD BY GUNSHOT WOUND NINETEEN YEARS AFTER THE INJURY.

CADWALADER, N. B. (*Ann. of Surg.*, June, 1920) reports most intelligently a very interesting case, giving all of the details of the local injury, operative repair and subsequent history, and states that the case proves that complete division of the cord at the tenth thoracic segment by gunshot wound is not in itself necessarily fatal, for if automatic emptying of the bladder can be established it is possible for the patient to live a comfortable chair life indefinitely. Furthermore, it goes to prove that, even under the most favorable conditions for surgical procedure, return of function does not occur, for in this case the separated ends of the severed spinal cord were approximated by suture within three hours after the injury, and after nursing for 19 years no clinical sign of a return of function has appeared. It can therefore, be assumed that regeneration of the spinal cord does not take place after complete section and end to end suture. [E. H. R.]

ACCIDENTS AND PRECAUTIONS IN LIGATION OF THE COMMON CAROTID ARTERY.

HOMANS, J. (*Ann. of Surg.*, June, 1920) reviews the history of a case and reviews, also, the literature in a very thorough manner, and concludes that if an injury to the common carotid is suspected the patient should be studied with a view to determining the quality of the emergency collateral circulation, that the operator should consider the strength of the arterial circulation as demonstrated by the blood pressure and the apparent degree of shock or its absence, that he should not undertake the procedure in absence of signs of dangerous extension of the local hematoma and in the absence of external hemorrhage. Unless all the circumstances appear favorable for the resumption of a collateral cerebral circulation, that he should be prepared for the temporary or permanent occlusion of the common carotid in case temporary occlusion induces immediate cerebral symptoms, that he should ligate the jugular vein before or during the occlusion of the artery, that he should be prepared to give blood transfusion, that he should use an anesthetic the least disturbing to the heart or brain, in other words, local anesthesia, when possible. [E. H. R.]

THE RELATION OF VARIATIONS IN THE RENAL VESSELS TO PYELOTOMY AND NEPHRECTOMY.

EISENDRATH, D. N. (*Ann. of Surg.*, June, 1920) presents an extremely well and profusely illustrated article bearing on this subject, comprising 18 pages. It is not suited for abstract but is of much practical interest to the surgeon. [E. H. R.]

(Continued on page viii.)

Adrenalin in Medicine

1—Its Physiological Action

ADRENALIN affects body tissues in a manner strikingly similar to the effect produced by stimulating the sympathetic nerve system. Thus, if the sympathetic nerves govern the contraction of certain unstriated muscle tissue, adrenalin, too, will contract it. If, on the other hand, the tissue in question is supplied with inhibitory impulses by this nerve system, adrenalin relaxes it.

These actions, however, are exerted neither through the medium of the sympathetic nerves nor directly upon the muscle fibres themselves. The receptive organs for these adrenalin impulses are the points of union of the sympathetic nerves and the unstriated muscle fibres—the myoneural junctions.

Probably the most important action of adrenalin is stimulation of the muscular coats of the arterioles. At first there is acceleration of the pulse rate, but the rise in blood pressure which results

from vaso-constriction soon excites the vagus centre and as a consequence the heart-beat is slowed and strengthened. Besides this indirect vagus action, adrenalin stimulates the heart directly, thus producing more complete evacuation of the chambers. In large doses, however, adrenalin predisposes the heart to fibrillary contractions.

The stimulating action of adrenalin is exerted also on the dilator muscle of the iris (dilates the pupil); the muscular fibres of the uterus and vagina; the retractor muscle of the penis; the pyloric and ileocecal valves; the glycogenolytic function of the liver; the salivary glands and the glands of the mouth and the stomach.

Adrenalin relaxes the muscular walls of the esophagus, stomach and intestines. Also on the muscular coat of the bronchioles adrenalin has a relaxing effect, due probably to vagus stimulation.



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(Continued from page vi.)

PATHOLOGY.

IMPORTANCE OF BLOOD GROUPS IN COMPLEMENT FIXATION REACTIONS.

WILLIAMS, W. C. (*Jour. Exp. Med.*, August, 1920), in a minutely analyzed article, states that:

1. In the Wassermann reaction it should be taken into account that, in addition to any complement-fixing bodies which may or may not be present, each serum tested belongs to a definite blood group and each human cell suspension used belongs to a definite blood group. These factors have never been sufficiently realized and must be taken into consideration if possible sources of error are to be excluded.

2. In addition to the isohemolysins in human serum, an additional source of error, when human cell suspensions are made up at random, is introduced by the presence of a natural anti-human hemolysin in guinea pig serum selective for Group I and Group II human cells.

3. Erythrocytes from a Group IV individual (Moss' classification) are never acted upon by the isohemolysins present in guinea pig serum.

4. Erythrocytes should always be obtained from a Group IV individual when preparing cell suspensions for complement fixation reactions in which an anti-human hemolytic system is used.

5. An unexplained variation in activity of the natural anti-sheep hemolysin in human serum, when tested against different sheep cell suspensions, would seem to be worthy of further investigation.

6. The presence of a natural anti-sheep hemolysin in guinea pig serum used as complement, apparently only active against a certain type or group of sheep cells, is a factor to be considered when selecting a sheep for complement fixation work. [E. H. R.]

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The Case For Coffee

Number Eight

"Science," wrote a great scientist, "has neither reason nor excuse for jumping at conclusions."

Yet, "jumping at conclusions"—or the assumption of fact from insufficiently analyzed evidence—has more than anything else retarded the progress of practical medicine.

Assumption, for example, that uric acid is the cause of rheumatism, gout and many other functional or organic disturbance or disorder of body organs or tissues, prevented for years the recognition of the true cause of such conditions and the real nature of uric acid, indican, etc.

Attempts therefore to condemn coffee as a source of uric acid or metabolic waste products, while given credence in the past, lose all force in the light of present knowledge. Old-

fangled dietaries used to *proscribe* coffee—modern ones allow it or *prescribe* it. We formerly forbade sugar and carbohydrates in diabetes mellitus. Today, knowing the patient can tolerate these in moderation, we allow them to be so taken. There was a time, when all water or liquid was forbidden during fevers. We used to bleed or purge *secundum artem* for so-called "reasons" arrived at by "jumping at conclusions." As for coffee, accused upon hearsay and prejudice of being a "dangerous drug" capable of doing considerable harm, we now realize and recognize it as possessing definitely beneficial therapeutic properties. Let no physician condemn or forbid coffee unjustly or as a result of "jumping at conclusions."

See next issue.

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The Management of an Infant's Diet

DIARRHEA OF INFANTS

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Stop at once the giving of milk.

Thoroughly clean out the intestinal tract.

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A diet that meets the condition is prepared as follows:

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Water (boiled, then cooled)	16 fluidounces

Feed small amounts at frequent intervals.

It is further suggested:—As soon as the stools lessen in number and improve in character, gradually build up the diet by substituting one ounce of skimmed milk for one ounce of water until the amount of skimmed milk is equal to the quantity of milk usually given for the age of the infant; also that no milk fat be given until the baby has completely recovered.

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The Boston Medical and Surgical Journal

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WILLIAM T. G. MORTON, THE DISCOVERER AND REVEALER OF SURGICAL ANESTHESIA: A PLEA FOR HIS PLACE IN THE HALL OF FAME.

By S. ADOLPHUS KNOFF, M.D., NEW YORK.

THERE still seems to be some misunderstanding among certain physicians concerning the man to whom belongs the credit of revealing and promulgating the use of sulphuric ether as a means to produce surgical anesthesia. I am therefore grateful to the BOSTON MEDICAL AND SURGICAL JOURNAL for being willing to offer its columns once more for a somewhat detailed discussion on the subject. On April 29, the editor of this periodical was good enough to publish my open letter entitled "No Physician or Surgeon as yet in the Hall of Fame." In that communication I deplored the fact that no physician or surgeon had yet been found worthy to be named among the great American immortals. I ventured to suggest as the three most worthy names, William T. G. Morton, the discoverer of ether anesthesia; Ephraim McDowell, the first surgeon to perform a rational, deliberate, and successful ovariectomy, and J. Marion Sims, a great gynecologist who perfected the plastic opera-

tion in the vagina for the relief of vesical fistulae and invented the speculum. I stated that the nomination should be sent to the Senate of the New York University, University Heights, New York City, and that this should be done by every American physician who feels the great injustice done to the American medical profession by the apparent neglect or oversight of the previous electors.

I received many letters of approval of my humble efforts and of my choice of the three names mentioned. A few of my correspondents, however, objected to the name of William T. G. Morton as not being the discoverer of surgical anesthesia, and in the *Journal of the American Medical Association* of April 24, there appeared a strong letter signed by Dr. S. J. Lewis, according to which the priority of the discovery of sulphuric ether as an anesthetic belongs to Dr. Crawford W. Long. It would lead to no result to recall here all the details of the old controversy between Morton, Long, and Jackson of half a century ago; the fact remains that before any one of these three men thought of the subject of anesthesia, means to subdue pain by all sorts of physical agents, such as various vapors, lotions, etc., were employed, and even hypnosis was resorted to by Esdaile and Elliotson (1790-1868) who operated hundreds of patients in the hypnotic state.

Granted that Crawford W. Long discovered the anesthetic properties of sulphuric ether long before Morton, he did not make known this method of producing sleep and insensibility to pain. Long did not prove to the medical profession that surgical anesthesia with the aid of sulphuric ether was "certain, safe, and complete." These words were used by Dr. Henry J. Bigelow, a member of the staff which was present during the operation on that memorable day of October 16, 1846.

Concerning the priority claims of Long and Jackson, Dr. J. Collins Warren, Moseley Professor of Surgery Emeritus, Harvard University, who wrote me only recently in reference to this matter, says: "It is probable that Long performed three or four minor operations with primary anesthetic and then abandoned his claims. As Dr. Keen says, he is deserving of nothing but censure for not having appreciated the value of the agent." Regarding the claims of Jackson and his heirs, it cannot be too strongly insisted upon that Dr. Charles T. Jackson was very unwilling to have anything to do with the discovery at first. According to a letter by a son of one of those present at the first operation, Dr. J. C. Warren, Jackson made the statement that "Morton would kill somebody next," and it was not until he had attended an operation in Dr. Warren's father's office, to which he was invited and saw Morton give the ether most successfully that Jackson came out the next day with an article in the newspaper claiming a share in the discovery. The heirs of Dr. Jackson now say that he was prevented from making the first public demonstration, that is to say, prevented from doing what Morton did at the Massachusetts General Hospital on October 16, 1846. The reason for Jackson's not doing this is given by the heirs as his being obliged to fill an important engagement to survey some mines in Maryland, but they state that he had directed Morton what to do and how to do it and assumed all responsibility. According to this, Jackson evidently thought the surveying of some mines more important than to give in person the first administration of sulphuric ether to a human being to prevent the pain and suffering which patients and surgeons had endured for centuries. Jackson's claim to have assumed all responsibility without himself administering the ether, would not have cleared Morton from guilt (homicide), had the patient

not survived the experiment. Thus to Morton and not to Jackson belongs the honor of demonstrating to the world the greatest conquest of the age.

Regarding the responsibility for the result of the first demonstration of general anesthesia and the method of administering the ether, Dr. George W. Gay, Senior Surgeon of the Boston City Hospital, and ex-President of the Massachusetts Medical Society, very pertinently says:

"The man who gave the anesthetic upon the memorable occasion at the Massachusetts General Hospital was Dr. William Thomas Green Morton. He had experimented with sulphuric ether, had demonstrated its safety and efficiency and sought an opportunity to show its efficiency in general surgery. He assumed the sole responsibility of the demonstration. The results, whatever they might be, rested upon him. His enterprise, his enthusiasm and his courage brought success. Whatever suggestions or assistance he may have received from others, he was *the* man that made anesthesia a practical, every-day blessing to mankind."

It has recently been my privilege to visit the Nestor of American surgeons, the venerable Dr. Stephen Smith, a physician who began his medical career before the epoch-making revelation of general anesthesia for capital operations. Those who have the rare good fortune to see Dr. Smith today in his 98th year, will be surprised at the physical and mental vigor of this veteran. When I told him of my efforts to get recognition for Morton and to place his name in the Hall of Fame, he promised me his assistance. I begged him to give me the information in writing, and on July 30, 1920, he was good enough to send me what follows:

"Regarding your inquiry about Dr. William T. G. Morton, I am very glad to forward you a few personal reminiscences. At the time of the controversy in Congress over the question of priority in the discovery of anesthesia I was Editor of the *New York Journal of Medicine*. Dr. Morton called several times on me to discuss the situation and I had an opportunity to estimate the value of much of the evidence presented by the competitors. Dr. Morton was a man of pleasing personality, always faultlessly dressed, extremely courteous, and evidently controlled by a highly organized nervous system. It was due to his restless nervous activity that anesthesia was finally brought to a pub-

lie test. His advocacy and practice of anesthesia in dentistry created a host of enemies who sought his ruin. He met them with ever-renewed instances of success and finally with the famous operation of Professor Warren on the sixteenth of October, 1846, at the Massachusetts General Hospital. Even at this operation the enemies took advantage of a slight delay in the appearance of Dr. Morton to impress the large audience of Boston's most prominent physicians and surgeons that he did not dare face a real trial of his vaunted anesthetic. It was only at the conclusion of the operation when Dr. Warren spoke these words heard around the world,—“Gentlemen, this is no humbug,”—that they were silenced.”

Dr. Smith then refers me to his contribution on History of Medicine in the latest edition of the *Medical Reference Handbook* (Vol. VIII, pp. 55 and 56), published by Wm. Wood & Co., New York, and to his article on “Reminiscences of the Introduction of Anesthesia and Asepsis” in the *Johns Hopkins Hospital Bulletin* of September, 1919 (p. 273). Both of these articles contain more detailed and explicit information concerning the right of Morton's claim to priority in the matter of introducing general anesthesia by sulphuric ether.

The question resolves itself into what is meant by priority in the case of a great discovery. In Owen's “Homologies of the Skeleton” we read the following definition of priority: “He becomes the true discoverer who establishes the truth, and the sign of the truth is the general acceptance. Whoever, therefore, resumes the investigation of neglected or repudiated doctrine, elicits its true demonstration, and discovers and explains the nature of the errors which have led to its tacit or declared rejection, may certainly and confidently await the acknowledgment of his right in its discovery.”

Francis Darwin in *Eugenics Review*, 1914, makes it still clearer when he says: “In science the credit goes to the man who convinces the world, not to the man to whom the idea first occurs.” Morton convinced the world; the credit is his.

The late Sir William Osler, our greatest modern medical historian, to whom I referred in my first communication, considers Morton the inventor and revealer of anesthesia by sulphuric ether, and he speaks of him as a new “Prometheus who gave a gift to the world as rich

as that of fire, the greatest single gift ever made to suffering humanity.” He pertinently asks in one of his latest essays on the subject (*Annals of Medical History*, Vol. 1, No. 4):

“Why do we not give the credit to Dioscorides, who described both general and local anesthesia, or to Pliny, or Apuleius, or to Hiotho, the Chinaman, who seems to be next in order, or to the inventor of the spongia somnifera, or to Master Mazzeo Montagna, in Boccaccio, or to any one of the score or more of men in the Middle Ages who are known to have operated on patients made insensible by drugs or vapors?”

In addition to the testimony of Osler, that to Morton and to no one else should be given the credit, I may be permitted to copy a part of a page from the *Century Illustrated Monthly Magazine* of August, 1894, containing a personal letter from Oliver Wendell Holmes, sent to Mr. E. L. Snell on April 2, 1893:

“This letter was written in reply to an inquiry addressed by the writer of the present article (Mr. Snell) to Dr. Oliver Wendell Holmes, who was a member of the medical staff of the Massachusetts General Hospital at the time of the discovery. Following is the full text.”

“Boston, April 2, 1893.

“My dear Sir:—

“Few persons have or had better reason than myself to assert the claim of Dr. Morton to the introduction of artificial anesthesia into surgical practice. The discovery was formally introduced to the scientific world in a paper read before the American Academy of Arts and Sciences by Dr. Henry J. Bigelow, one of the first, if not the first, of American surgeons.

“On the evening before the reading of the paper containing the announcement of the discovery, Dr. Bigelow called at my office to read the paper to me. He prefaced it with a few words which could never be forgotten.

“He told me that a great discovery had been made, and its genuineness demonstrated at the Massachusetts General Hospital, of which he was one of the surgeons. This was the production of insensibility to pain during surgical operations by the inhalation of a certain vapor (the same afterward shown to be that of sulphuric ether).

“In a very short time, he said, this discovery would be all over Europe. He had taken a great interest in the alleged discovery, had been present at the first capital operation performed under its influence, and was from the first the adviser and supporter of Dr. W. T. G. Morton, who had induced the surgeons of the hospital to make trial of the means by which he proposed to work this new miracle.

“The discovery went all over the world like a conflagration. The only question was whether Morton got advice from Dr. Charles T. Jackson, the chemist, which entitled that gentleman to a share, greater or less, in the merit of the discovery. Later it was questioned whether he did not owe his first hint to Dr. Horace Wells of Hartford, which need not be disputed.

“Both these gentlemen deserve honorable mention in connection with the discovery, but I have never a moment hesitated in awarding the essential credit of the great achievement to Dr. Morton.

“This priceless gift to humanity went forth from the operating theatre of the Massachusetts General Hos-

pital, and the man to whom the world owes it is Dr. William Thomas Green Morton.

"Yours very truly,
"O. W. HOLMES."

As further evidence that the credit should be given to Morton, I will cite a paragraph from an address by Prof. William H. Welch, of Baltimore, delivered on October 16, 1908 (the 62nd Anniversary of Ether Day), as follows:

"The attendant circumstances were such as to make the operation performed on October 16, 1846, in the surgical amphitheater of this hospital, by John Collins Warren, upon the patient, Gilbert Abbott, placed in the sleep of ether anesthesia by William Morton, the decisive event from which date the first convincing public demonstration of surgical anesthesia, the continuous, orderly, historical development of the subject, and the promulgation to the world of the glad tidings of this conquest of pain. Had this demonstration or any subsequent one of like nature failed of success, it is improbable that we should have heard much of claims to the prior discovery of surgical anesthesia."

In a letter dated July 29, 1920, Professor Welch heartily endorsing my efforts on behalf of William T. G. Morton, writes: "Surgical anesthesia has been America's greatest contribution to medicine and surgery and it would be a thousand pities not to have this recognized in the Hall of Fame. As only one name can be selected for this purpose, it is clear to me that this name should be Morton."

I know that no one ever devoted more time and labor to the unbiased search for the truth in this ether controversy, especially the Morton-Jackson issue, than Professor William H. Welch. Thus I sincerely hope that the documentary evidence given by Henry J. Bigelow, Oliver Wendell Holmes, S. Weir Mitchell, Stephen Smith and William H. Welch, and the opinions expressed by such men as Warren, Osler, Gay, and Keen, may suffice to settle the controversy for good and all. Having sent the evidences at my disposal to the 102 electors it was gratifying to me to receive from Prof. R. S. Woodward, the President of the Carnegie Institution of Washington, one of the electors, a most courteous letter in which among other things he says:

"I had already seen most of the data you furnish but it will all be useful for reference in connection with the rather arduous tasks the Electors of the Hall of Fame have assumed. It is a great pity that partisanship with respect to the merits of various candidates should be

pushed so hard as it is. But data such as you have furnished serve to mitigate the severity of such partisanship. The facsimile of the letter of Oliver Wendell Holmes is very convincing in respect to the case of Morton.*

Dr. Charles H. Mayo, the distinguished surgeon of Rochester, Minn., one of the electors of this year, wrote me as follows: "It is a sad commentary that no medical man's work has been considered of sufficient importance to warrant a tablet in the Hall of Fame." In some quarters objection to Morton has been raised because he having been a dentist does not really represent the medical profession. Leaving aside the fact that he studied medicine a number of years and Harvard having conferred upon Morton an honorary degree of Doctor of Medicine, should we not and do we not consider dental surgery a branch of general surgery? This, too, is the opinion of no less an authority than Prof. William H. Welch, the Dean of Johns Hopkins Medical School.

There should not be any difference of opinion as to the nomination of Morton to the Hall of Fame, and every American physician and surgeon and dental surgeon could and should be helpful in bringing about this just reward to the memory of a man to whom the whole civilized world is indebted for this gift of medicine to mankind—"the death of pain."

The electors have until October first to make their decision, so there are time and opportunity for all those interested to write to any one of the 102 electors for the Hall of Fame, or to the Senate of the New York University. By addressing a request to Mrs. William Vanamee, the Secretary and Acting Director of the Hall of Fame, 347 Madison Avenue, New York City, a list of this year's electors will be furnished.

Fortunately we have among the electors this year no less than four medical representatives.—Major General Leonard Wood, Prof. William H. Welch, and Drs. William J. and Charles H. Mayo. I hope the good and great General will forgive me for still claiming him as one of ours.

We should not only have William T. G. Morton, but also several other of our great Americans belonging to the profession of physicians and surgeons in the Hall of Fame. In my first communication on the subject I mentioned Ephraim McDowell and J. Marion Sims. From a rather voluminous correspondence resulting from my first article entitled "No Phy-

* A facsimile of Oliver Wendell Holmes's letter, addressed to Mr. Snell, was sent to each of the 102 electors of the Hall of Fame.

sician or Surgeon as yet in the Hall of Fame," which appeared in nearly all of the leading American medical journals during the month of April, I gather that there is also a strong desire to see the great Benjamin Rush (1745-1813), whom Roswell Park in his History of Medicine calls "the most conspicuous medical character of the century," included among America's great immortals. Rush will always be held in grateful admiration as an acute observer of diseases by American internists. His descriptions of clinical phenomena are today as classic and authoritative as when published, and of course I am glad to include the man after whom Rush Medical College is named among those of our profession who should have a place in the Hall of Fame. Lastly, there is Walter Reed, who should not be forgotten. His discovery of the mode of conveyance of yellow fever has resulted in the saving of untold thousands of lives, and it is to be hoped that his name will also soon be found among the immortals in the Hall of Fame. But however great the achievements of Rush, McDowell, Sinas and Reed may be, those of Morton surpass them all. Because of his epoch-making revelation surgery was made painless, and thanks to this it has become an almost perfect art and science whereby countless lives are saved annually throughout the civilized world.

It may not be universally known that Morton died virtually in poverty and heartbroken because he had received no recognition for his epoch-making discovery and daring experiment. I feel that I cannot close this ardent appeal for justice to "the inventor and revealer of anesthetic inhalation before whom in all time surgery was agony" better than by quoting a few verses from the immortal poem, "The Birth and Death of Pain," by the late Dr. S. Weir Mitchell, read on October 16, 1896, at the Commemoration of the Fiftieth Anniversary of the First Public Demonstration of Surgical Anesthesia:

What angel bore the Christ-like gift inspired!
What love divine with noblest courage fired
One eager soul that paid in bitter tears
For the glad helping of unnumbered fears,
From the strange record of creation tore
The sentence sad, each sorrowing mother bore,
Struck from the roll of pangs one awful sun
Made pain a dream, and suffering gently dumb!
Whatever triumph still shall hold the mind,
Whatever gift shall yet enrich mankind,
Ah! here, no hour shall strike through all the years,
No hour as sweet, as when hope, doubt and fears,
Mid deepened stillness, watched one eager brain,
With God-like will, decree the Death of Pain.

How did we thank him? Ah! no joy-bells rang,
No peans greeted, and no poet sang,
No cannon thundered, from the guarded strand,
This mighty victory to a grateful land!
We took the gift, so humbly, simply given,
And coldly selfish—left our debt to Heaven.
How shall we thank him? Hush! a gladder hour
Has struck for him, a wiser, juster power
Shall know full well how fitly to reward
The generous soul that found the world so hard.
Oh! fruitful Mother—you, whose thronging states,
Shall deal not vainly with man's changing fates,
Of freeborn thought, or war's heroic deeds,
Much have your proud hands given, but naught
exceeds
This Heaven-sent answer to the cry of prayer,
This priceless gift which all mankind may share.

GASTRIC AND DUODENAL ULCERS: TYPICAL AND ATYPICAL FORMS; THE RELATIVE VALUES OF DIAGNOSTIC PROCEDURES.

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THE symptomatology of the usual type of gastric or duodenal ulcer (peptic ulcer) is generally well known. But the atypical manifestations of peptic ulcer, although long known to exist, are not so universally recognized. Furthermore, the status of radiographic and laboratory findings as aids in diagnosis does not seem to be clearly defined in the minds of many clinicians. There is a tendency on the one hand to overvalue laboratory findings and on the other hand to misinterpret x-ray findings. This state of affairs is easily explained. Until comparatively recent years laboratory findings were the only adjunct in the diagnosis of ulcer and hence rightfully held a valuable status. But this status has become changed by the development and application of radiographic methods as an aid in the diagnosis of gastrointestinal lesions. Such a change tends to produce more or less confusion as to the diagnostic status of the different methods. In order to appreciate better and to evaluate more properly the significance of these methods as aids in diagnosis and to comprehend better their relative importance, an analysis of the records of eighty selected cases of duodenal and gastric ulcer has been made. Fifty-five diagnoses were confirmed by operation. In the remaining cases the x-ray

findings or frank hematemesis made the accuracy of the diagnosis practically certain.

Forty-six of the cases occurred in men and thirty-four in women.

The age incidence is given in the following table:

1-20	0
21-30	12
31-40	18
41-50	27
51-60	16
61-70	6
75	1

Thirty-six widely different occupations were represented among the patients. The use of tea, coffee, alcohol and tobacco was not excessive in more than a very slight minority. Thus neither occupation nor habits played an apparent etiological rôle.

The duration of the symptoms could be determined in sixty-nine cases. The extremes were ten days and forty years. In eight cases symptoms had been present from ten days to nine months, in forty-two cases from one to twelve years, and in nineteen cases from fifteen to forty years.

Although no new clinical types have been discovered, a discussion of those observed will be given in order to enhance the understanding of the significance of the x-ray findings, especially in the atypical cases. Since the only accurate preoperative method of differentiating between gastric and duodenal ulcer is by means of radiographic studies, no attempt will be made to separate the manifestations of these two lesions. For purposes of discussion the symptomatology will be divided into two groups: *i. e.*, the more common typical and the less frequent atypical varieties.

TYPICAL FORM OF PEPTIC ULCER

Fifty-four cases of the typical form of peptic ulcer have been studied. In twenty-eight of these the ulcer was located in the first portion of the duodenum and in twenty it was in the stomach. In fifteen of the latter the ulcer was situated on the lesser curvature some distance above the pylorus. In six cases, in which frank hematemesis occurred, the anatomical site of the ulcer was not located by x-ray studies and the patients were not operated on.

The symptomatology of the typical form of ulcer is illustrated in the following case report.

Case No. 1. K. C. M. Med. No. 10860. White, male, car starter, aged 47. Admitted to

the Peter Bent Brigham Hospital April 10, 1919, and transferred to the Surgical Service April 16, 1919.

Diagnosis: Duodenal ulcer.

The patient entered the hospital complaining of epigastric pain after meals. The past medical history was unimportant. There had been a slight loss in weight,—ten pounds.

Gastrointestinal History: The onset of gastric symptoms occurred six years prior to admission to the hospital. It was characterized by distress and sharp pain in the epigastrium, occurring regularly from one to one and a half hours after meals. The pain radiated to the dorso-lumbar region. The pain persisted for from one to two hours unless relieved by the ingestion of soda or food. Pain did not disturb the patient's sleep. Since the onset attacks similar to the one described had occurred at intervals of about every three months and persisted for two weeks at a time. There had been no vomiting, no jaundice and no bloody or tarry stools.

Physical examination, including that of the abdomen, was essentially negative.

Röntgen Report 14582. The stomach was normal in position and contour. It was slightly atonic and contained practically the entire six-hour barium residue. Peristalsis was vigorous and the waves deep. The sphincter was normal. The duodenal cap could not be completely filled and its lesser curvature side was constantly irregular. There was only a trace of the barium in the small intestine at the six-hour observation.

Interpretation: The findings are those of duodenal ulcer.

Clinical Pathology: The fasting gastric contents contained no food residue. Free HCl was 50. The benzidin test for occult blood was negative. After an Ewald test breakfast free HCl was 85 and total acidity 100. Wassermann reaction in the serum was negative. The usual examinations of the blood and urine were negative.

At operation an ulcer of the duodenum was found.

A distinguishing feature in the report of the above case is the time relation between the taking of food and the onset of epigastric pain. This feature characterizes the typical class of peptic ulcers. The epigastric pain varied greatly in severity in the different cases of this series and at times in the same case. In a small minority the pain was of the nature of mild distress, but usually it was intense enough to cause much distress, while frequently it was severe *i. e.*, in thirty-seven of the fifty-four cases. Two other features of diagnostic importance are

the occurrence of remissions and exacerbations and the relief of pain by soda or food. In this series exacerbations occurred in forty-seven of the fifty-four cases, and the pain was relieved by soda or food in fifty-one cases. The three in which such relief did not occur were cases of gastric ulcer. Night-pain was not present in the case reported but it was a disturbing feature in fourteen of the fifty-four cases of this series. Backache, in the dorso-lumbar region, was a prominent symptom in three cases. In one of these it was the patient's chief complaint, and in another it had led to studies for the determination of possible renal calculi.

Hematemesis had occurred, sometime during the course of the disease, in eleven cases and tarry stools in ten. In the cases of recent hemorrhage there was a pronounced degree of secondary anemia. Dyspeptic symptoms, such as bloating, gaseous eructations, regurgitation, nausea and occasional vomiting were frequently observed, but rarely prominent. Vomiting was a marked symptom in but three cases, while it occurred fairly frequently in thirteen.

In the cases of this series the history, together with the evidence of ulcer furnished by x-ray studies, made the diagnosis with a high degree of accuracy.

Summary of findings in typical peptic ulcer:

The patient presents himself complaining of epigastric pain occurring at a fairly definite time after meals and in the great majority of cases relieved by taking soda or food, or less often by vomiting, which is frequently induced. Occasionally the pain radiates, usually to the back. Frequently night-pain is a disturbing feature. Although hematemesis and tarry stools occurred in nearly 20 per cent. of the cases, the occurrence of these phenomena in relation to the duration of the disease and the number of exacerbations is relatively infrequent. Rather rarely vomiting is a prominent symptom. Belching, regurgitation and other dyspeptic symptoms occur frequently but as a rule they are not particularly distressing to the patient.

The radiographic findings show evidences of an ulcer in some portion of the stomach or in the first portion of the duodenum.

ATYPICAL FORMS OF PEPTIC ULCER.

The atypical class of peptic ulcer includes twenty-six of the eighty cases studied. This

class may be divided into six types and contains the modification of the typical group produced by benign pyloric obstruction. The types are as follows:

The gall bladder type of peptic ulcer. This class is characterized by pain resembling in all respects that occurring in cholelithiasis. The pain occurs either in periods of exacerbation, such as is the rule in the typical class of peptic ulcer, or at irregular intervals. The following case report illustrates this variety.

Case No. 2. J. S. Med. No. 12180. White, male, tailor, aged 52. Admitted to Peter Bent Brigham Hospital November 1, 1919, and transferred to Surgical Service November 13, 1919.

Diagnosis: Preoperative diagnosis, chronic cholecystitis; postoperative diagnosis, gastric ulcer.

The patient was admitted to the hospital complaining of abdominal pain. The past medical history was unimportant.

Gastric History: During the past fifteen years there had been attacks of severe pain, beginning in the gall-bladder region, radiating around the right costal margin to the back and up under the right scapula. The point of maximum intensity was in the right axillary line just above the costal margin. The onset of pain was abrupt, and the latter persisted from 15 to 30 minutes. Pain occurred at any time of the day or night and bore no relation to meals. From 2 to 10 painful attacks occurred a day, and were accompanied by much belching. The attacks persisted for a couple of weeks then disappeared not to recur for a year or two. The patient had never vomited, although he had often been nauseated. There had been no jaundice, dark urine, or clay-colored, bloody or tarry stools.

Physical Examination: The physical examination was essentially negative.

Roentgen Report 16544. Esophagus was normal in outline. The position of the stomach was slightly to the left of the mid-line. There were rather weak peristaltic waves. There were no tender points on palpation over the stomach. Stomach was freely movable, and no filling defects were seen. Its outline was regular, but there was a marked prepyloric bulge. Duodenum was small, the cap not well made out. Duodenum was drawn well up under the gall-bladder region, was in an oblique position, but was not tender on palpation. Ileum was low, freely movable and showed a small six-hour residue. The head of the column of barium was in the cecum at the end of six hours; at the end of twenty-four hours it was in the sigmoid. Cecum filled normally, was freely movable and showed no tender points. It contained a twenty-four hour residue. Appendix was not visualized. Colon

filled normally, had a rather low position and no fixed areas were discovered.

Interpretation: The prepyloric bulge, with no definite evidence of the sphincter itself, together with the abnormally placed duodenum is probably the result of an extragastric rather than of an intragastric process; *i. e.*, a tumor or adhesions.

Clinical Pathology: The fasting stomach contents contained free HCl 15 and total acidity 38. The benzdin test was negative. Gastric contents after an Ewald test breakfast contained free HCl 58 and total acidity 70. Two stools contained no occult blood. The usual examinations of blood and urine were negative. The Wassermann reaction in the blood serum was negative.

Surgical Note: The patient was operated upon for supposed gall-bladder disease. The gall bladder was opened and showed nothing pathological. The first portion of the duodenum was tied to the gall bladder by a broad, vascular, congenital band of connective tissue. This band arose from the proximal two-thirds of the gall bladder, crossed the duodenum and was inserted into the transverse mesocolon. An old ulcer was found on the inferior surface of the pyloric sphincter and had constricted the entire pyloric ring.

In this case (Case No. 2) the pain was typical of cholelithiasis. The only resemblance to that of peptic ulcer was its occurrence in exacerbations. The radiographic picture was so obscured by the effect of the congenital adhesions on the outline of the pylorus and duodenal cap that the ulcer was not able to be detected. However, under usual conditions the deformity due to an ulcer, in the pylorus, sphincter or duodenum, can be demonstrated, as was done in three cases of this type of ulcer. In this type of case the diagnosis can be made by the aid of radiographic studies, provided the latter show findings definitely characteristic of ulcer. As will be discussed later, x-ray findings resembling ulcer of the stomach and duodenum may be produced by causes other than ulcer. A history of jaundice may even be present in this type of ulcer case and yet at operation the gall bladder found to be normal, as occurred in one case (Med. No. 11972).

The pain in certain numbers of this group is located in the epigastrium and it may or may not radiate. There are six examples of this type of pain in this series. However, in certain of the cases the pain was not particularly severe; in one case it was dull, aching in character.

Type of peptic ulcer resembling malignancy. Three cases whose clinical picture resembled closely that of malignancy superimposed upon peptic ulcer have been studied. The three cases were operated upon and portions of the ulcers excised and examined microscopically: they showed no malignant changes. In one case there was a history typical of painful peptic ulcer of 27 years' duration. In the other two cases there had been no pain (except in the last exacerbation in one case) but only mild epigastric distress associated with dyspeptic symptoms. The resemblances to ulcer were (1) the long duration, 6 and 15 years, and (2) the occurrence of remissions and exacerbations of the symptoms.

The following case report is an example of the type of ulcer which resembles malignancy.

Case No. 3. J. C. B. Med. No. 11906. White, male, retired, aged 78. Admitted to the Peter Bent Brigham Hospital September 26, 1919, and transferred to the Surgical Service October 14, 1919.

Diagnosis: Preoperative diagnosis, malignancy superimposed on an old ulcer; post-operative, gastric ulcer and benign pyloric stenosis.

The patient entered the hospital complaining of "stomach trouble." The past medical history is unimportant.

Gastric History: The symptoms consisted of anorexia, belching and occasionally epigastric distress occurring three to four hours after meals. The epigastric distress was temporarily relieved by soda or food. These symptoms had persisted with remissions and exacerbations for a period of six years. There had been no vomiting and no bloody or tarry stools. During the last eight months prior to admission to the hospital distress three to four hours after meals, flatulence and belching had been present continuously. There had been nausea occasionally, but no vomiting. During the latter three months of the present illness the patient had lost 35 pounds in weight.

Physical Examination: Other than the evidences of considerable loss in weight the physical examination was essentially negative.

Röntgen Report 16090. Two fluoroscopic examinations were made. The stomach was dilated and atonic. Peristalsis on one examination was practically absent, while in the second it was vigorous and of the obstructive type. There was a constant filling defect in the region of the antrum, the margins of which appeared irregular in outline. The sphincter was not seen. Practically the entire six-hour barium meal was in the stomach, and at the 24-hour ob-

servation the stomach was still outlined by barium.

Interpretation: The findings are those of a carcinoma involving the sphincter and causing pyloric obstruction.

Clinical Pathology: The fasting stomach contents contained remnants of food eaten fourteen hours previously. Free HCl was 10 and total acidity 43. After an Ewald test breakfast the gastric contents contained free HCl 40 and total acidity 60. Benzidin test for occult blood was negative. Hemoglobin was 80 per cent., and the white cells 8,000 per c.mm. The Wassermann reaction in the blood serum was negative. The urine contained no pathological elements.

Surgical Note. The preoperative diagnosis in this case was malignancy superimposed on an old ulcer. At operation the pylorus was found to be obstructed by a mass of scar tissue resulting from an old ulcer, and no evidences of malignancy were found even by microscopic examination of an excised piece of the tissue.

In the above case the presence of anorexia, the other symptoms of the dyspeptic group, the marked loss of weight and the x-ray findings led to the diagnosis of malignancy. In this case pyloric obstruction was present but in the two other cases of this type the ulcer was on the lesser curvature, far removed from the pylorus. The latter two cases showed marked secondary anemia, and in one there had been marked loss of weight. But in these two cases the x-ray findings were such as definitely to rule out all but microscopic evidences of cancer. It is worthy of note that free HCl was present in the gastric contents, of the three cases, removed after an Ewald test breakfast.

Peptic ulcer with constant epigastric pain.

Four cases of gastric ulcer, the diagnoses confirmed at operation, have come under observation in which the patients complained of constant epigastric pain. In one of these the pain was unaffected by food, while in the others food aggravated it. In one of the cases the x-ray findings were diagnostic; *i. e.*, an incisura and a niche present on two examinations made several weeks apart. In the other cases the radiographic findings were distinctive but not diagnostic. They are illustrated by the following case report.

Case No. 4. E. V. W. Med. No. 10783. White, female, clerk, aged 21. Admitted to the Peter Bent Brigham Hospital March 31, 1919, and transferred to the Surgical Service April 3, 1919.

Diagnosis: Ulcer of the stomach (non per-

forating); chronic cardiac valvular disease, mitral stenosis and insufficiency.

The patient entered the hospital because of abdominal pain. The family history was essentially negative. The patient had had rheumatic fever at the age of 8 years, pneumonia at 12 years, and tonsillitis at 16 years. Otherwise the past history was essentially negative.

Gastrointestinal History: During the years 1916 and 1917 the patient had "bilious attacks" characterized by headache, nausea and vomiting. Such an attack was of about two days' duration, and confined the patient to bed. In February, 1918, the onset of knife-like pain occurred. The pain was located in the xiphoid region, it occurred without relation to food, and was relieved by vomiting. At times the pain occurred during the night. Pain persisted until September of the same year. At this time hematemesis occurred. The patient now took medical treatment for gastric ulcer with a good result. For about seven months the patient was free from symptoms. There then developed constant pain in the epigastrium of variable severity and which radiated along the right costal border. The pain was worse immediately after eating. Night pain was not a disturbing feature.

Physical Examination: Except for the usual signs of mitral stenosis and insufficiency the physical examination was essentially negative.

Röntgen Report 14451. Stomach was normal in position and tone, freely movable, with hyperperistalsis. There was a medium sized six-hour residue. There was a small area on the lesser curvature, in the region of the antrum and sphincter, over which peristaltic waves did not pass, while they were plainly visible along the greater curvature. The sphincter was tender to palpation. Duodenum was normal in outline and position. The ileum was not remarkable. At the end of 6 hours the head of the barium column had reached the transverse colon and in 24 hours it was in the rectum. The cecum was normal. Appendix was not seen. Entire colon was empty at the 24-hour observation.

A second examination one week later gave the same findings.

Interpretation: The findings are those of a probable small ulcer involving the sphincter and antrum.

Clinical Pathology: Examination of the fasting gastric contents showed no stasis, no free HCl and a total acidity of 16. The benzidin test for occult blood was strongly positive. After an Ewald meal the free HCl was 20 and the total acidity 50. The stools contained no occult blood. The Wassermann reaction in the blood serum was negative. The usual examinations of the blood and urine were negative.

Surgical Note: At operation a small ulcer

was found. The ulcer involved the proximal portion of the pyloric sphincter.

The type of peptic ulcer with marked vomiting. Vomiting was a marked symptom in 4 cases. In 3 of these cases there was no abdominal pain; in one (gastric ulcer) there was mild epigastric distress followed by vomiting immediately after meals, in another (duodenal ulcer) there was slight epigastric distress accompanied by vomiting but not related to meals, while epigastric distress was rarely present in a third case (duodenal ulcer) and the vomiting was not related to food. In the fourth case vomiting followed severe epigastric pain; the pain was not related to meals. In the first three cases, in which the diseases had been present one to forty years, exacerbations had occurred, while the fourth case came under observation in the first attack. A history of hematemesis was obtained in each case.

An example of a pure type of this variety of ulcer is given in the following case report.

Case No. 5. E. B. White, male, attorney, aged 60 years.

Diagnosis: Chronic duodenal ulcer.

The patient was under observation 14 days in the fall of 1919. The family history and past medical histories were negative.

Gastric History: For the past 40 years the patient had had periodic attacks of vomiting occurring a few times a year and persisting for weeks. During an attack 10 years ago severe hematemesis occurred. Medical treatment for gastric ulcer was taken with apparent recovery. Since then until the summer of 1918 the patient had remained free from symptoms. In July, 1918, an attack similar to the present one occurred. X-ray studies at that time showed a deformity of the first portion of the duodenum. Medical treatment for duodenal ulcer resulted in complete arrest of symptoms, except for some occasional epigastric distress quickly relieved by soda, until the onset of the present illness. The latter began two weeks before the patient came under observation. During this period there had been some belching and on one day vomiting (no hematemesis) preceded by slight epigastric distress. The vomitus had contained lettuce eaten 12 hours previously. During the 36 hours prior to observation the patient had vomited frequently. The vomitus consisted of considerable quantities of greenish, non-bloody, non-food containing liquid. No pain or epigastric distress had been present.

The physical examination was negative except for the abdomen. Just to the right of the umbilicus was an easily palpable, small, sausage-shaped, hard and freely movable tumor. Two days later, after the cessation of vomiting,

the abdominal tumor had disappeared, although the character of the abdomen was favorable for palpation.

Roentgen Report: The stomach was normal in position and tone, and its outlines were regular. The antrum and pyloric sphincter were normal. Peristalsis was active, at times vigorous, nevertheless there was a moderate sized six hour barium residue. The first portion of the duodenum was oblique in position. The outline was constantly irregular on the lesser curvature side of this portion of the duodenum.

Interpretation: The findings are those of an ulcer in the first portion of the duodenum.

Clinical Pathology: Examination of the different specimens of vomitus showed no food residues, even when solid food had been taken 12 hours previously. Free HCl was present. The benzidin test for blood was negative. The stools contained no occult blood. The Wassermann reaction in the blood serum was negative. The usual examinations of the blood were negative. The urine contained a few red blood cells due to a mild grade of chronic prostatic disease.

Peptic ulcer may be complicated by the development of organic pyloric or duodenal obstruction and of multiple ulcers. The latter may at times be diagnosed by radiographic studies. Obstruction is indicated by more or less frequent vomiting of food eaten 12, 24 or more hours previously and the finding of food residue in the fasting gastric contents. A positive diagnosis of pyloric obstruction can be made by the proper radiographic studies. Many of the cases reported in this series were chronic perforating ulcers; but the symptoms permitted this diagnosis to be made only after x-ray or operative studies.

The method for obtaining samples of gastric contents, in 61 of the cases, was one modified from that of Rehffuss. A Rehffuss tube was left *in situ* throughout the entire period of collection of samples. The latter were drawn off at 40, 60 and 80 minute intervals.

Free HCl was present in the contents of the fasting stomach in 43 and absent in 18 cases. The total acidities present after an Ewald test breakfast in the 61 cases are as follows: above 70 in 22 cases, from 60 to 70 in 11 cases, from 30 to 50 in 23 cases, and below 30 in 5 cases. These figures represent the highest total acidities present among the three samples obtained at one sitting. For this reason the number of high acidities recorded is greater than if the meal had been extracted at the 60 minute period only. From the relative number of gastric contents with high acidity it is seen that the latter

is a common finding in the presence of peptic ulcer. However, a high acidity is often found in gastric neuroses and other conditions. Lockwood¹ estimates that 80 per cent. of hyperacidities are due to causes other than peptic ulcer. For these reasons the value of the finding of a high gastric acidity in a given case as an aid in the diagnosis of ulcer is problematical. On the other hand, the presence of free HCl is of some importance because the latter is rarely found when malignant changes affect the stomach. Food residue, as obtained by the stomach tube, is also of some value in relation to the diagnosis of pyloric obstruction, especially if it is persistently obtained on repeated examinations. However, it may occur in the absence of organic obstruction; *i. e.* pylorospasm, atony.

Occult blood was demonstrated in both the gastric contents and stools in 6 cases, in the gastric contents alone in 5 cases and in the stools alone in 16 cases. If occult blood tests are positive in the gastric contents obtained by frequently repeated examinations, then it is fair to assume that the source of the blood is an intragastric or duodenal lesion. If blood is present on a few examinations only there is no way to conclude whether or not its sole source has been incident to trauma produced by the stomach tube. For this reason the finding of occult blood in the gastric contents is usually of scant aid in the diagnosis of peptic ulcer. However, the obtaining of gross quantities of changed blood is of decided diagnostic value.

The persistent finding of occult blood in the stools, after ruling out extraneous causes such as hemorrhoids or fissure, has been a rather infrequent finding in the cases of this series; *i. e.*, on two or more examinations in 15 of the 80 cases. To make sure of the source of blood, stools resulting from meat-free diets must be tested. When obtained under this condition a positive blood test has no differential value between ulcer and cancer and as to what part of the gastrointestinal tract is affected. But it does indicate an active process somewhere in the gastrointestinal canal.

Summary of laboratory findings: Gross blood in the gastric contents and vomitus, or in the stools, is of much diagnostic value; although it may result from causes other than benign ulcer. The history of repeatedly vomiting old food residues or their persistent presence in the

gastric contents have some value as an aid in diagnosing organic pyloric obstruction. The presence of free HCl in the vomitus or gastric contents is occasionally of some aid in differentiating between ulcer and cancer. The persistent presence of occult blood in the stools indicates hemorrhage somewhere in the gastrointestinal tract.

It is the experience of this clinic that by radiographic studies evidence of gastric or duodenal ulcer can be demonstrated in the great majority of ulcer cases in which such studies are properly executed. Mayo² states that such evidence is found in 95% of cases of peptic ulcer. The exact character of these findings is fully discussed by Carman.³ There are cases of peptic ulcer in which the x-ray findings are negative by all methods of examination. In cases of duodenal ulcer the serial method of taking plates, devised by Cole, may demonstrate evidences of ulcer when other radiographic procedures fail. Three cases were observed in this clinic during the past year in which the symptoms were those of peptic ulcer, but in which x-ray findings were negative. In one of these cases an ulcer in the first portion of the duodenum was demonstrated at operation. The serial method of taking plates was not used in these cases.

By x-ray studies whether the food residue is the result of organic or spasmodic pyloric obstruction, or to simple atony can be definitely determined; *i. e.*, in six cases of organic and several of spasmodic obstruction in this series. In all but rare, exceptional cases the differential diagnosis between ulcer and cancer can be settled by radiographic studies. From these findings it is evident that the value of x-ray studies as an aid in the diagnosis of gastric and duodenal ulcer is much greater, in the vast majority of cases, than the data obtained from the usual laboratory procedures. However, it must not be inferred that x-ray findings are diagnostic in themselves. The causes producing certain irregularities in the outline of the stomach and duodenum, which resemble those of ulcer, are at times difficult to determine. This is illustrated by Cases Nos. 2 and 3 and in the following case report.

Case No. 6. M. M. McC. Med. No. 10448. White, female, domestic, aged 43. Admitted to the Peter Bent Brigham Hospital February 5, 1919, and discharged improved February 24.

1919. Admitted to Surgical Service May 7, 1919.

Diagnosis: Preoperative diagnosis, ulcer of the duodenum; postoperative diagnosis, perigastric adhesions.

The patient entered the hospital complaining of stomach trouble. One brother died from hematemesis and a sister of cancerous obstruction of the bowel.

Gastric History: The patient had been troubled with indefinite symptoms of indigestion for 20 years. Since the death of her husband and the onset of the menopause one year ago the dyspeptic symptoms had grown worse. These consisted of fullness and gas after food, followed in three to four hours by a gnawing sensation in the epigastrium. Occasionally the gnawing sensation became true hunger pain, which would be relieved by soda or food. Frequently the pain awakened the patient in the early morning hours. She vomited for the first time two months before admission to the hospital. The vomitus contained a slight amount of red blood. The appetite was good. There was no loss in body weight.

Physical Examination: The physical examination was negative except for slight epigastric tenderness, some cardiac enlargement and hypertension, blood pressure of 178 mm. systolic and 100 mm. diastolic.

Roentgen Report 13843. Esophagus was not remarkable. Stomach was high, freely movable and normal in tone with hyperperistalsis. There was a small six-hour barium residue. A good sphincter was seen. Duodenum was large, but could not be completely filled, was distorted in outline and there was tenderness on palpation. Ileum was not remarkable and contained a six-hour barium residue, while the head of the barium column had reached the hepatic flexure and in 24 hours was in the rectum. The cecum contained a 24-hour barium residue. Appendix was not seen. Colon was not remarkable.

Interpretation: Duodenal findings are those of an ulcer.

Clinical Pathology: The fasting stomach contents contained no food residue, no free HCl and a total acidity of 10. The benzidin test for occult blood was negative. The gastric contents after an Ewald test meal contained free HCl 40 and a total acidity of 80. The benzidin test was negative. Twenty stool examinations for occult blood were negative. The usual examinations of the urine and blood were negative. The Wassermann reaction in the blood serum was negative.

Progress: On a Sippy diet the patient improved somewhat during her stay in the hospital. After discharge she relapsed and finally was operated upon for a supposed duodenal ulcer. However, no ulcer was found. Instead, adhe-

sions to the gall bladder were present and accounted for the radiographic findings of a distorted duodenal cap. The adhesions were removed and a posterior gastrojejunostomy performed. After recovery from the operation the patient's former symptoms returned and were present three months later.

The preoperative diagnosis of duodenal ulcer in this case rested upon the history and x-ray findings. Such cases as this and Cases No. 2 and 3 make it evident that radiographic studies are to be considered as but a part of the physical examination of the gastrointestinal tract. X-ray findings, like those obtained from other methods of physical examinations, are to be considered as but a part of the symptom complex, in relation to which they must be interpreted.

CONCLUSIONS.

The symptomatology of peptic ulcer may be divided into typical and atypical groups. The typical type, by the aid of radiographic findings, may be diagnosed with a high degree of accuracy. In the diagnosis of the atypical class x-ray studies are of the utmost value; in many cases the diagnosis cannot be made without the aid of radiographic findings.

X-ray studies should form a part of the physical examination of every gastrointestinal case. Their importance in the diagnosis of peptic ulcer is second only to that of the history of the case.

X-ray studies are the most efficient and accurate aids in the differentiation between functional and organic pyloric obstruction, and between ulcer and cancer.

In the great majority of cases laboratory findings are of less value as an aid in the diagnosis of peptic ulcer than those obtained from radiographic studies.

The laboratory findings valuable in diagnosis are gross amount of blood in the vomitus or gastric contents, the frequent vomiting of old food residues, and tarry stools. Findings of less value are the persistent presence of occult blood in the stools, the presence of food residue in the gastric contents, and the presence of free HCl in the gastric contents.

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IMPLANTATION METHODS IN COSMETIC RHINOPLASTY.

BY SEYMOUR OPPENHEIMER, M.D., F.A.C.S., NEW YORK.

APART from the at one time widely popular method of cosmetic rhinoplasty by means of paraffin injections, various implantation methods have received attention by operators interested in this work, and especially so since reports of the unsatisfactory results of paraffin injection began to creep into the literature. The work of Roe and his advocacy of the intranasal method of cosmetic rhinoplasty served to stimulate considerable interest in the subject, but unfortunately Roe's work was shrouded in so much mystery that little real progress was made except by the few pioneers here and there who sought to improve on existing technics, or to elaborate more satisfactory ones. To provide a suitable framework and support for noses whose bony framework had been weakened or destroyed by trauma, operative or otherwise, a number of different materials have been employed for implantation, among which may be mentioned gold, German silver, filigree wire, hard rubber, decalcified bone, ivory, celluloid, etc. Some of these materials have been commented on most enthusiastically and implanted with apparently excellent results, but the usual experience was that these foreign body implants healed in beautifully, and then after a variable length of time either showed marked absorption or other disintegrative change with loss of the cosmetic result obtained; either this, or these foreign body implants became the seat of such unmistakable irritation that their removal was rendered necessary, and hence the ultimate cosmetic result was often worse than the original condition. For these reasons most of the materials above enumerated have been discarded in favor of better and more physiological methods.

In 1889, Dr. Weir employed the breastbone of a duck for restoration of a nasal bony framework, and numerous other animal transplants have been employed from time to time, but none of them proving ideal in all respects.

For convenience, such transplants may be outlined as below:

1. The autoplasmic operation, that is, the transference of bone or cartilage from one part of the body to another, which experience

has conclusively demonstrated to be the ideal method, and the one which gives the best and quickest results.

2. The homoplastic, or transplant of bone or cartilage from one animal to another of the same species, and it may be said that this method is also often successful.

3. The heteroplastic, or transplant from one animal to another of a different species; usually unsuccessful.

At this time the autoplasmic operation is almost universally used, and material taken usually from the tibia or rib. Pieces of turbinate, septal cartilage and bone from other regions of the body, have been utilized with success. As a general rule, rib is more often used than tibial transplant. There is a considerable difference of opinion as to the fate of the tissue thus transplanted, the majority of writers holding that all transplanted bone is resorbed and is replaced by a new growth of bone from the periosteum. Where rib is employed, a segment about two inches in length is taken, the upper two-thirds consisting of bone and the lower third of costal cartilage. In regard to the question of whether it is better to use bone or cartilage for transplantation, Lee Cohen lays down the sensible proposition that where bone formerly existed bone should be preferred, and where cartilage existed formerly cartilage should be used. He states that the required thickness of the transplant was the criterion as to whether the tibia or rib should be used. Where a long thin span was needed he uses rib, but never the entire thickness of the rib. Instead of resending entire rib portion he makes a pattern of a metal strip the size of bone transplant desired, and after sterilization, exposes the rib, lays metal strip on it, marks out the size of the piece to be removed, the upper two-thirds over bone and the lower third over the sternocostal cartilage, so that bone is employed in regions where bone previously existed in the nose, and cartilage below, where cartilage should normally be. He uses the outer table of rib, down to the diploic structure only, and this is removed with a narrow straight chisel, with implantation over nasal dorsum by incision within the nasal vestibule. It is needless to say that the rib transplant is removed under aseptic precautions, and to still further obviate danger of infection, separate instruments should be used for the

nasal work, and the transplant handled only instrumentally.

Experience shows that periosteum and perichondrium should be left on at least one side of the graft, usually that in contact with the skin. Care should also be taken to see that the under surface of the graft is in contact with the periosteum-denuded nasal bones. Where rib transplant is used, it may preferably be taken from the eighth or ninth ribs, about two inches in length and consisting of two-thirds rib and one-third costal cartilage.

Where there is marked deformity, several fragments of bone may be superimposed to fill out the dorsal outline of the nose to the required degree; this is preferable to the use of one large fragment of bone as the smaller transplants possess relatively greater osteogenic power than the larger ones.

In cases where the deformity is not marked, a septal spur or deflection may be removed by submucous resection and transplanted onto the bridge of the nose to fill in a depressed portion of the same, a pocket being made by blunt dissection and the transplant pushed into place without suturing. Recently I have employed a portion of the middle turbinate body with its epithelial covering denuded with very satisfactory results.

It may next be in order to describe in a general way the technic employed in implantation for restoration of the bridge of the nose, the steps and method of operation being modified in different cases to meet somewhat different conditions encountered. The operation may be performed under general, but preferably under local anesthesia.

Under aseptic precautions and local anesthesia, a segment is taken from the ninth rib about two inches in length and consisting of two-thirds rib and one-third costal cartilage, care being taken not to fracture the junction between bone and cartilage. The periosteum on the anterior surface of the transplant is preserved, and the segment of rib, which is only down to the diploic structures in thickness, is fashioned to suit the deformity to be corrected.

The nose and adjoining parts of the face are swabbed with tincture of iodine, followed by alcohol cleansing, and likewise the interior of nose may be swabbed with iodine. Some operators tampon the nose well back to prevent

blood and secretion flowing back into nasopharynx, although I have not found this necessary. The nose is anesthetized internally by swabbing with 10 per cent. cocaine after the manner of preparation for a submucous resection of the septum, while subcutaneously the field of operation is anesthetized by hypodermic injections of one per cent. sterile cocaine solution. The subcutaneous tissues are well infiltrated, and also the submucous tissues about the nasal vestibule. While excessive bleeding is not a characteristic of these operations, yet a small amount of adrenalin may be combined with the cocaine solution with advantage. Tissues about the tip of the nose appear particularly sensitive and should be well anesthetized.

After the local preparation, as described above, the tip of the nose is raised and a small spatula-shaped knife introduced into the nasal cavity at a point directly below the level of the nasal bone. Through this opening, the tissues over the dorsum and lateral aspects of the nose are freely elevated and undermined, the extent of the undermining being dependent upon the nature of the deformity, and the size of implant to be inserted. After preparation of a suitable pocket where indicated over the dorsum, the transplant is introduced intranasally and slipped down into position by pulling on the tip of nose for manipulation of lower end of transplant, while the upper end is securely tucked under the periosteum in close contact with the frontal bone. Where the deformity is marked, several fragments of bone may be superimposed, this being preferable to using one large fragment, as small transplants have been found to possess relatively greater osteogenic power than large ones. Depending upon extent of the deformity, turbinate cartilage well denuded of its mucosa may be used, as also septal cartilage taken from the patient by submucous resection, or less favorably from another patient. As a rule, no suture is required to hold the transplant in position. In general, drainage is not required, but where deemed advisable, small strips of rubber tissue may be carried well up onto the dorsum of the nose between the nasal bones and the skin, the ends hanging out of the intranasal incisions made for undermining, and care being taken upon their withdrawal that the implant is not disturbed. The vestibules may be packed with petrolatum gauze, or with bismuth-petrolatum gauze, and externally the nose protected by a

splint of dental compound held in place by adhesive straps across the face and dorsum of nose.

Where reaction is extensive, it may be controlled with ice compresses and for the first night after operation a sedative is of service in insuring the patient a quieter night with less likelihood of damage to the nose in sleep. The nasal splint should be removed daily, as also the intranasal packing, and the nasal passages cleansed with douching and steam inhalations; where drainage has been employed, the rubber strips can be left *in situ* for several days, and likewise the nasal splint may be worn for several days, particularly at night.

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BIO-KINETIC THERAPEUTICS. A TERM OFFERED TO DESCRIBE REMEDIES APPLIED FROM THE OUTSIDE, ACCESSORY OR SUPPLEMENTAL OR AUXILIARY OR SO-CALLED "PHYSICAL THERAPEUTICS."*

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NOTHING so retards the acceptance and adoption of well attested remedial measures as vagueness or unsuitableness in definitions, designations, or descriptive terms. On the other hand, acceptance of inadequate measures is oftentimes proportional to the picturesqueness of the nomenclature.

Remedial measures applied from the outside have now reached a state of scientific and practical permanency on a full parity with those taken, or put, into the organism. As yet, however, they have by no means come to inspire the confidence they abundantly deserve, and particularly in the appreciation of the profession. Among the chief reasons for this neglect, or suspicion, is the absence of a suitable nomenclature. In consequence those who discuss or make use of them, fail to comprehend

each other. Consistence in reasoning as well as in expression becomes impaired. The best interests of the public are thus made to suffer.

In searching for a comprehensive epithet to include all those groups of remedial agencies often referred to as auxiliary, accessory, supplemental, or the wholly cloudy word "physical," the prime need is to adopt one uniformly related to some basic principle, or denominator common to all.

This basic idea or element is motion in some or other of its infinite modalities. All life being motion, energy in its kinetic phase, actual, doing, performing, constructing, reconstructing, adapting, therefore efficient life processes are sustained by the maintenance of equilibrium.

The primal attribute of protoplasm is that it resumes its former immediately preceding position, shape, adjustment, after encountering opposing forces; in short it exhibits automatic stabilization.

The chief requisite in problems of disordered states, then, is for restoration of order, of structural and functional normalities or health. This can be done, and only done through suitable adaptations and applications of kinetic energy, that is bio-kinetic remediation. The French writers use the word bio-kinetic and with this significance, though in a restricted sense.

Thus we may contrast pharmaco-dynamics or chemico-dynamics and kineo-dynamics. The cell undergoes no essential or structural change after the application of kineo-genie stimuli designed to achieve adaptation or re-adaptation, whereas it always undergoes some change after chemico-genie agencies have been applied.

Hence we may conclude that kineo-genie remedies are at least safer than chemico-genie remedies.

It is fair to assume that when the resources of kineo-genie remedies come to receive the same attention, equally careful, critical, scrutiny, as has been given to pharmaco-genie agencies, they will take a place in scientific and popular esteem on a full parity with those now given major credence. Man lives not so much by bread alone as by feelings, preferences, traditions, customs, fashions. He believes in proportion as ideas are clothed in the odor of sanctity, conferred by authority, through age-long familiarity, the mass energy of usage, or

* Read before and discussed by the New England Society for Physical Therapeutics, January 27, 1920.

of folk ways. Man's consciousness reacts most readily to complexes, catch words, growing into wise sayings, maxims, proverbs, aphorisms.

When you come to think of it all, remediation is a process of equilibration or stabilization, or of orthobiosis. Now if this balancing of urges, of impulses, with restraints can be achieved as readily, as controllably and as permanently by a nice selection and judicious application of mechanistic instrumentalities, it would seem they should at least fulfill the primary requirement of any curative measure, and that is to *do no harm*. Powerful drugs (chemico-genic remedies), on the other hand, even scientifically selected bacterio-genic, sero-genic, or vaccino-genic substances when thrust into the interior of the organism, are admitted to oftentimes induce baffling by-effects or excess reactions which, so far as I know, are incapable of being controlled *per se*, however much they may be neutralized, nullified or antagonized by other contrarily acting, yet similar substances or instrumentalities introduced within to meet, and offset, their undesired influences.

Most, if not all, of those agencies or instrumentalities applied from without are, as has been said, in essence and at bottom some manifestation of motion, active or passive, positive or negative, actuating or inhibiting. Hence we might use the term kinesis or bio-kinesis and not go far wrong in the way of description. The term kinematics is more inclusive, being that part of the science of mechanics which treats of motion, its direction, velocity, acceleration, composition, and the like modifications of energetics, without reference to mass or restraints. Therefore, why may we not adopt some descriptive term which involves the idea of release of energies such as kineto-genies, through manifestations of electro-genies, radio-genies, photo-genies, thermogenies, always including psycho-genies and the like. Among the detail subjects are climato-genies, areo-genies, hydro-genies, etc. It would be well to visualize in some one term the resources of latent dynamics, conveying the idea of weight, ponderability, of mass, of gravity, and hence as a correlate the need of structures for support, suspension, fixation, local rest, of positions of advantage or of disadvantage and hence for adjustment.

Health is generally admitted to be an or-

derly action, reaction and interaction of the forces at work in the organism, and unhealth is a disorderliness. "Order" is said to be "Heaven's first law," hence the prime desideratum of therapeutics is to restore order, equilibrium, stabilization. There can be no more praiseworthy enterprise than to restore orderliness in human bodies when they are disordered. This is to be achieved by kinetics, that manifestation of dynamics in which forces are causing or modifying, or changing the manifestations of motion in bodies, or of the circumstances of actuation or inhibition in those bodies.

The primal objective of the science of therapeutics is to secure uniformity in the aims and directions of approach to the problem of restoring balance or poise in functions (health). We should come to some agreement upon what those aims shall be, and, in order to achieve those aims we must unify the terms used in the procedures. Until we reach some stability in this realm of endeavor we remain, as at present, unfamiliar with, or not wholly understanding, the language or our colleagues.

Indeed, when once we make a satisfactory start, when we can come to agreement as to the type of words we shall use, the duty arises to clothe the primary ideas of health processes or of repair in a language at once suitable and consistent and broadly intelligible.

Simplification of technical terms is a paramount desideratum, but full regard should be had for exactitude, the essential significance. Old words and terms are liable to acquire transferred meanings, to wander away from the primary intent. Example: the word phusis, growth, is so misused that we have "physiology" on the one hand and in sharp contrast "physics"—a confusion of the living and the dead—of organic or inorganic. If a word can be found of reputable origin, whether in or out of use, capable of being utilized and expressing scientific significances, one upon which we can agree as to its use, let us do so.

This by no means leads to a diffusion of significances, rather to a bringing back of their essences, to the restoring or reclothing them with not a new but a true meaning, a redintegration.

For another example, consider the term orthopedies, which signifies the process of straightening out a crooked child—a most

laudable enterprise—but as a description of what is now intended, misleading when applied to readjusting adults or old men. The processes of orthopedies involve motion, prompt or graduated, applied by the hand or by apparatus or by cutting such structures as are permanently obstructive. It is a process of remedying through encouraging motion in a living mechanism or organism.

The process is one of kinesthesia or kinesis, or kinesiatrics, or of akinesis, the life element is indicated by the root term "bion." An even better one, the term orthobiotic, is also used by the French to embrace a larger group of subjects, the straightening out of life, the whole of life processes, including the mind—psycho-orthobiotics.

I would submit that we might do worse than to adopt and recommend this comprehensive term orthobiotics and the special one bio-kinetics as descriptive of that entire enterprise of readjustment, restitution, rearrangement, rather than orthopedies as now conceived and employed.

Finally, the great domain of physical hygiene, regulation of conduct (chiefly physical) and of behavior, chiefly of the affective faculties,—feelings, emotions, etc.,—which needs a better presentation through improved terminology. The aim is harmony throughout all actions and interactions, all manifestations of energy, and even here the one phase most comprehensive is bio-kinetic regulation.

ENDOMETRITIS: ITS PATHOLOGY AND DIFFERENTIATION FROM MALIGNANCY.*

By W. CLAUDE USHER, M.D.

PERHAPS no other medical term is used with less precision than endometritis. Many authors, as Dudley, Hirst, etc., speak of it as an independent disease, but many, like Ashton, include under endometritis, all uterine inflammations. A short paragraph from Ashton's "Practice of Gynecology" will make this clear: "The starting point of inflammatory affections of the uterus is, generally, the endometrium, and the disease may, eventually, extend to the muscular walls of the uterus and even to the

peritoneum. Metritis, or inflammation of the uterine parenchyma is, therefore, not a distinct or separate disease, but a condition that is secondary to an infection of the endometrium. Sometimes the peritoneal coat of the uterus is primarily affected, and the disease subsequently involves the parenchyma of the organ, and finally the endometrium. These cases are, however, comparatively rare, and are due to septic inflammation in one of the pelvic organs causing an adhesion between it and the uterus. Again, a laceration of the lower segment of the uterus may be followed by septic infection which may extend into the parenchyma before involving the endometrium."

"In the light of modern pathology, inflammation of the uterine mucosa becomes a subject of vital importance, since it is the starting point of nearly all the inflammatory lesions of the pelvic organs."

Such a statement coming from this well-known authority brings us to a fuller realization of the importance of the endometrium in pelvic disease. While Dudley states that "the most significant factor in metritis is the endometrium," his anatomical classification of metritis into endometritis, myometritis, and perimetritis, lessens the student's appreciation of the importance of the endometrium.

Bewildering, is indeed a mild term to express the variety of classification for endometritis. Bases for such have been etiological, pathological, anatomical, and clinical. Etiologically, endometritis may be said to be: (1) Bacterial (gonococcus), tubercle bacillus, streptococcus, staphylococcus, or saprophytes; (2) non-bacterial (secondary to uterine tumors, cervical lacerations, uterine displacements, etc.). Pathological classification will be considered later; anatomical has already been illustrated (Dudley), and it remains only to speak of the clinical classification, *viz.*, (1) acute, (2) chronic. In routine gynecological work, these are the two forms most often differentiated; further subdivision of the chronic form into glandular and interstitial types sometimes occurs.

The acute or septic form of endometritis is uncommon, but may follow injury, or more usually pyogenic, saprophytic, or gonorrheal infection of the mucosa. Pyogenic infection with streptococcus or staphylococcus occurs usually after labor, or abortion. However, an acute endometritis may be associated with cer-

* This paper was written by Dr. Usher, not long prior to his death in 1910, as a part of his work in fourth-year gynecology in the Harvard Medical School. It is printed now as a tribute to the memory of this young hospital interne of much promise.

CHARLES M. GREEN, M.D.

tain infectious diseases, as typhoid, diphtheria, etc. Pathologically, the mucous membrane is swollen, congested, loosened in attachment, hemorrhagic, and covered with mucopurulent exudate. Necrosis of superficial membrane usually occurs with formation of granulation cell tissue in its deeper layers walling off the process, and preventing absorption. In severer grades, the organisms may penetrate the lymph channels, blood spaces and myometrium, leading to suppuration in the uterine wall, peritonitis, salpingitis, oöphoritis, and probably septicæmia.

A clinical or etiological classification of chronic endometritis must be very wide. Thus we might speak of the simple chronic forms including the congestive and constitutional types or of the septic chronic forms including the tubercular, gonorrheal, etc. The chronic endometritis is the usual course in a gonorrheal infection, and leads to the pathological pictures soon to be presented. Tubercular endometritis is, of course, usually secondary to tubercular tubes or cervix, and presents a swollen mucosa with characteristic elements of tubercular tissue, *viz.*, caseous material, tubercles, giant cells, etc., and may be of the miliary, interstitial, or ulcerative types.

Prolonged inflammatory disturbances, whether the result of infection, or of some uterine condition, as displacement, subinvolution, etc., causing congestion, results eventually in increase of both adenoid and of interstitial tissue, *viz.*, hyperplasia. Pope describes it as beginning with a glandular proliferation following microbe infection, or the above causes, with extension to the surface of the underlying parenchyma, and resulting in the formation of embryonal cells. The epithelial surface of the endometrium is raised, and proliferation of the epithelial cells occurs with enlargement, and twisting of the gland tubules. Clinically, this stage might be regarded as a simple endometritis with leucorrhœa, but no interstitial hypertrophy. Round celled infiltration of the interglandular connective tissue next occurs, so that the glands become more widely separated by the increased stroma. The round cells may in turn become spindle, and epithelioid in type, and by pressure on the ducts cause swelling of the glands, and retention cysts. The vessels increase in number and size, so the uterine wall becomes congested and we now get the second clinical stage, with leucorrhœa and interstitial

hypertrophy plus engorgement. Thus, the whole process is really one of young vascular, connective tissue formation, which by successive transformation into spindle cells, fibrils, etc., becomes scar tissue. This continuous pressure on the glands results in their atrophy and disappearance, at least from the surface layers of the mucous membranes. Thus we have the atrophic stage (sometimes termed senile endometritis). To sum up, therefore, the hyperplasia described by Pope and Hirst may be either glandular, interstitial, or of mixed type, *viz.*, both glandular and interstitial. Dudley's histological classification of chronic endometritis into (a) glandular or parenchymatous with hypertrophic and hyperplastic types, and (b) interstitial, agrees well with the above outline.

In Abel's Gynæcological Pathology, endometritis is viewed as inflammatory, and non-inflammatory in origin. Those changes resulting in certain forms of tissue proliferation due to inflammatory disturbances, he speaks of as being either atrophic (interstitial) or hypertrophic in type. This interstitial type agrees with the changes already outlined, *viz.*, round celled infiltration of the stroma, the cells becoming spindle and epithelioid, and proceeding to the organization of scar tissue with subsequent atrophic changes. The hypertrophic type is characterized by simultaneous affection of both glandular and interstitial tissues. It differs from the atrophic (interstitial) type, in that no disappearance of tissue occurs as a terminal event. The glands increase in number and size, and in some places the lining epithelium may become proliferated and exhibit several layers, but never any lawlessness of growth as in malignancy. Through growth and infiltration of a vascular stroma, the glands may be thrown into folds, or by pressure, dilated with cyst formation. The changes in the stroma correspond closely to those already described.

Non-inflammatory conditions present in the mucosa result in what Abel styles hyperplasia, *viz.*, overgrowth of the mucous membrane without microscopical evidence of inflammation. The mucous membrane may be thickened throughout or only in part, giving us (1) hyperplasia of the endometrium, which may assume a diffuse or circumscribed (polypoid) form, (2) hyperplasia of the glands, which we usually designate "chronic hyperplastic en-

dometritis." In this latter form, the interstitial tissue is relatively much reduced, the lining epithelium of the glands may be thickened and in several layers. From the fact that, while such a type, resembling, as it does, malignant adenomas, yet retains its glandular formation, and its epithelial cells always respect the boundary of growth formed by the *membrana propria* we may style it 'Benign Adenomatous Disease' of the endometrium (Roberts). Such are the cases which require careful microscopic differentiation from neoplasms.

It remains to speak of a type of true inflammatory endometritis usually occurring after an abortion, *viz.*, deciduoma endometritis. While this retention of placental tissue may be the primary cause of the existing inflammation, the latter is, as a rule, a continuance of or a flaring up, of an old septic or gonorrheal infection. The changes are confined principally to the interstitial tissue which shows the decidual cells being separated by numerous round cells with the interpolation of mononuclear leucocytes.

Pathology has been observed to recognize non-inflammatory affections of the endometrium resembling ordinary forms of endometritis in hypertrophy of both glandular and interstitial tissues. Such recognition has not yet attained a firm basis in clinical routine. We still usually label a case with persistent menorrhagia, metrorrhagia, and leucorrhea as a chronic endometritis. Probably two reasons will account for this general tendency on the part of practitioner and specialist alike: (1) a trend in gynecology to avoid minor lesions, (2) the revelations of bacteriology as to the bacterial origin of endometritis, causes the assumption of an infectious nature for any similar symptoms complex. The following case illustrates my contention:

Mrs. S., 23, newly married. Her menstrual periods had always been regular, lasting only five days. She became pregnant and passed through a protracted confinement with a puerperium which, though free from fever, was not ideal. Subsequently, her periods lasted eight to nine days and were accompanied by a profuse leucorrhea. Endometritis was diagnosed and patient continued so for four years, when she again became pregnant. Her confinement was easy and natural, her puerperium satisfactory, except for a continued colored discharge lasting for eleven weeks. Ten days after its

cessation, it returned, lasting two weeks. Her periods now continued for ten days, yet she became a third time pregnant. Thus her condition was attributed to chronic endometritis, in spite of the fact that she never had any inflammatory disturbance, nor any sign of infection, and no possible irritation by local medication.

Fortunately it is more and more now recognized that many conditions still termed endometritis are non-infectious. Such conditions we meet with as the French "*Mérite des vierges*" or in German authorities as "*Essentielle Blutungen*." While imperfectly understood, these conditions are excellently reviewed by Fothergill. The basis for his conclusions rest to a large extent upon an early article by Dr. Donald, "*Chronic Endometritis and Metritis in Virgins*," which I must briefly outline. Dr. Donald reports some forty cases of such conditions in women where all possibility of infection or neoplasm was excluded by selection, *viz.*, all were virgins with history of no operative interference, etc. His study, resulting in the following three groups of cases, prove that the conditions were non-inflammatory: (1) With small cervix,—acute anteversion or retroflexion. Small corpus, which, under ether, is found to be slightly enlarged and elongated. There was often stenosis; (2) with ordinary cervix, a large and heavy corpus, either anteverted to excess or retroverted; (3) hypertrophied cervix with cervical catarrh. He found pain in lower abdomen in 36 cases; dysmenorrhea in 33; leucorrhea in 31; and menorrhagia in 16. Microscopical examination of curettings obtained generally revealed the utricular glands of normal structure, but increased in number; the interglandular tissue swollen and oedematous, but poor in cellular elements, or else normal; occasionally the interstitial tissue showed more fibrous tissue than normal. The vascular structures usually presented no marked changes. Hence his conclusion was a general hypertrophy of the uterine mucosa.

This form Donald has styled idiopathic endometritis or benign adenoma of the endometrium. Such cases have been reported by Donald, Walls, and Ostrom. It was first suggested by Sinclair that these hypertrophic conditions of the endometrium resulted from defective development of the uterine muscle.

Theilhaber, who stands preëminent amongst German research workers in this line, points

also to the common diagnosis of chronic endometritis in cases of excessive bleeding and leucorrhœa without obvious cause. This diagnosis of primary endometritis, he believes to be erroneous, its real nature being hypertrophy secondary to a primary lesion of the mesometrium. Similarly, chronic metritis is generally believed to be an inflammation of mesometrium secondary to infective inflammation of the endometrium. He holds that in the majority of cases of metritis there is no primary inflammation of the endometrium but rather a primary defect of the uterine muscle with secondary hypertrophy of the endometrium.

Basis for this belief is worked out on the fact that uterine contractions play a great part in regulation of the pelvic circulation. As inefficient and infrequent muscular contraction may give rise in people who stand a great deal, to varicose ulcer, so with insufficient uterine contractions we may have a resultant venous stasis and consequent overnutrition, and hypertrophy of the endometrium. This muscular inactivity may be especially marked during menstruation, when the pelvis is already congested. Thus we may have the periods prolonged, and an intermenstrual leucorrhœa.

Normally, the uterine musculature develops in physiological relation to the vascular element. In the child's uterus only one-third the tissue is muscle, and the blood vessels are narrow and thin walled; the remainder is connective tissue. Towards puberty, the muscle and vessels begin to increase; the connective tissue becomes less and less in amount, until at the age of 10-20, when menstruation is usually established, the uterus contains twice as much muscular as connective tissue. In the healthy woman, who remains unimpregnated, these proportions remain until about 40 years of age. When a pregnancy intervenes, the muscular and connective tissue both increase rapidly to the time of parturition, then quickly fall back. The uterus remains larger after each successive labor, but this is due to a relative increase in connective and not in muscular tissue, since the involution of connective tissue does not proceed to the same degree as that of muscular tissue. The weight of an average multiparous uterus is 35-40 gms., while that of the average parous organ is 60-70 gms. Another change begins some years before the last menstruation; the uterine muscle fibres

atrophy, vessel walls thicken, the lumina being lessened by a sort of physiological arteritis obliterans, the amount of connective tissue increases. When menstruation ceases, the process is not complete, but continues until at 60 years of age, the muscle, as at childhood, forms one-third of uterine tissue. Theilhaber has a curve to illustrate this process of evolution.

We are now in a position to appreciate the clinical conditions which may arise from the muscular inefficiency above spoken of. After puberty menstruation may be excessive and metrorrhagia may persist, due to the fact that muscular development has not kept pace with vascular development. Curettings at first show a normal, but finally an hypertrophied mucosa. Again at the climacterium we get a good deal of muscular atrophy, which is accompanied normally by stenosis of vessels and lessening of blood stream. If the vascular change be delayed, we get venous stasis and engorgement, and hence hypertrophy of connective tissue, giving a chronic metritis and endometritis, characterized clinically by metrorrhagia and leucorrhœa. Frequent parturitions may eventually produce a similar condition, resulting in subinvolution which, according to Theilhaber, is an exaggerated muscular atrophy during the puerperium, followed by hypertrophy of connective tissue, and not, as generally taught, an incomplete physiological postpartum atrophy of uterine muscle. In fact, it is superinvolution plus hypertrophy of connective tissue. A similar muscular inefficiency, due to degenerations, may account for the metrorrhagias so common in chlorosis, phthisis, and the acute infections.

The later microscopic researches of Dr. Anton Meier, in some 61 uteri, determine the relative percentages of muscular and connective tissue at varying ages (5 months to 75 years). His results corroborate Theilhaber's clinical curve, establishing beyond question the influence of parturition, age, and the menopause. Lorentz investigated nine uteri removed on account of intractable hemorrhage and found thickening of the wall, numerous large vessels, with microscopic increase of connective and decrease in muscular tissue.

Theilhaber, in summing up his own work and that of Meier, proposes two forms of endometritis, (a) primary endometritis with or without secondary mesometritis; (b) primary disease of mesometrium with or without sec-

ondary hypertrophy of the endometrium. Under (a) come infective conditions of the endometrium, as gonorrhea, puerperal fever, tubercle bacillus, etc. Under (b) come hypertrophy of the virgin uterus, muscular degenerations from general diseases, uterine fibrosis following diseased appendages, subinvolution, change in fibroids, and senile uterine changes. Of course, you may have inflammatory changes in any uterus, along with the results of muscular inefficiency. Donald's cases prove beyond question the existence of these non-inflammatory conditions. In the light of Theilhaber's work, the term endometritis should be reserved for infectious conditions and not applied to every case presenting leucorrhea and menorrhagia.

Differential diagnosis of endometritis is of interest and importance chiefly as to the question of early malignancy. With carcinoma we have hemorrhage, discharge and often pruritus vulvae. The character of the hemorrhage differs greatly from that of endometritis; it begins with a greater or less leakage, usually first noticed after sexual intercourse and defecation. There may be only a slight staining of a continuous leucorrhea; there may be only prolonged menstruation or continued flowing after the climacterium. Rarely is hemorrhage profuse, and no relation exists between the quantity of blood lost and between the loss of strength. The discharge is watery in character at first and of offensive odor, and as ulceration advances, we get mixture with blood, pus, broken down tissue, feces, etc. Pruritus vulvae often results from the irritating discharges. In endometritis, the hemorrhage is usually intermittent and profuse in character, not preceded by leakage. It usually bears more or less relation to the menstrual periods. Discharge is usually of mucoid or purulent character with less disagreeable odor. Vaginal examination at once reveals the hard, nodular infiltrations and the "crater-like" vagina, etc., of carcinoma. The importance of an early diagnosis of malignancy cannot be too strongly insisted upon, as the hope of cure by radical operation depends wholly upon it. Hence, we must, in every case of menstrual excesses, or of irregular uterine hemorrhage, take the precaution of an early microscopic examination of curettings, or of excised portions of the cervix in trachelorrhaphies; for only upon such a measure can a positive diagnosis of malignancy rest.

In this connection, the work of Cullen is especially valuable. He insists that, in examination of such tissues, we note whether there is any dipping down of the squamous epithelium on the vaginal portion of the cervix; whether finger-like masses protrude; is there loss of substance on the cervical surface, or any rounded infiltration of stroma; are the glands normal in number, and are they lined by one layer of epithelium; do they invade the deeper cervical tissues. In his work, Cullen points out cases of endometritis which present suspicious signs of early malignancy. Thus he instances swelling of the surface epithelium with proliferation to five or six layers, the individual cells being swollen and containing pale staining nuclei. He cites six or seven such cases with no evidence of nuclear division nor any tendency of epithelium to invasion of the underlying tissues. In one case there was proliferation even to five or six layers of lining epithelium accompanied by the formation of several new gland structures lined by a low cuboidal epithelium with enlarged lumina. In true carcinoma the glands are usually smaller, the epithelial cells cylindrical, closely packed together and stained deeply, also invading the underlying tissue.

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APPOINTMENT OF DR. RICHARD A. BERRY.—Announcement has been made that Dr. Richard A. Berry, professor of anatomy in the University of Melbourne, has been appointed Stewart lecturer in that university for the year 1921. In conjunction with Mr. S. D. Porteus, director of the research laboratory of the training school at Vineland, New Jersey, Professor Berry recently issued a report describing a practical method for the diagnosis of mental deficiency and other forms of social inefficiency. He will consider this subject in his Stewart course.

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OBSTETRIC MORTALITY IN MASSACHUSETTS.

A MONTH ago the JOURNAL in an editorial article called attention to the increasing death rate in childbirth, to the increase in puerperal septicaemia, and expressed the opinion that the condition of obstetrics in the State should not be tolerated. Exception has been taken to this opinion. Exception has further been taken to the inclusion of statistics of 1918 because of the influenza epidemic of that year.

The JOURNAL does not question the obstetric skill of many physicians, but it does feel it a duty to lay before the medical profession again and in more detail the facts regarding the deaths due to pregnancy and childbirth throughout the State.

The annual average death rate from diseases of pregnancy and labor per 10,000

deliveries calculated on a three-year average is shown below. Alongside the figures for the State have been placed figures calculated on the same basis for the Boston Lying-In Hospital Out-Patients. The steady increase for the State makes a very striking contrast to the decline for the patients of the Lying-In Hospital.

	MASSACHUSETTS	OUT-PATIENT DEPT., BOSTON LYING-IN HOSPITAL
1901-1903	38	16
1904-1906	42	19
1907-1909	45	8
1910-1912	49	8
1913-1915	51	4
1916-1917*	59	6

* Two years only.

That later statistics are not going to be better is indicated by the fact that the number of deaths of mothers per 10,000 births and still births in Boston was 63 in the first half of 1919 and was 88 in the first half of 1920. Among the out-patients of the Boston Lying-In Hospital in 1919 the death rate per 10,000 was eight (one in 1232 and that due to influenza).

These figures are laid before the medical profession. They are taken from the Report of Vital Statistics of Massachusetts for 1917, pp. 122-125, and from the reports of the Boston Lying-In Hospital. The late figures are from the Monthly Bulletin of the Health Department of Boston for June, 1920. If they "contain an indictment of the whole medical profession" the JOURNAL agrees that "it behooves those of the profession in any way interested to ask for an honest, impartial and scientific inquiry into the condition of obstetric practice in Massachusetts." That was the purpose and aim of the first editorial article to which reference has been made. The JOURNAL is of the opinion still that the death of one mother in one hundred and fourteen in the city of Boston in the first half of the current year indicates a condition of obstetric practice which is intolerable. The facts are available to the public: can the medical profession afford to ignore them?

THE INFLUENZA EPIDEMIC IN ENGLAND.

THE latest statistics issued by the Registrar-General on the influenza epidemic in England

lead us to appreciate more fully than ever the insidiousness of that disease. With the single exception of the cholera epidemic in 1849, the mortality rate attributed to influenza during 1918-1919 is the highest rate recorded for any epidemic in England since registration was first begun in that country. During 1918, deaths allocated to influenza numbered 112,329, of which 53,883 were among males and 58,446 were among females. Deducting the 7,591 non-civilians included in the males, the deaths of civilians corresponded to a mortality of 3,129 per 1,000,000 civilian population. None of the previous outbreaks of influenza can compare in mortality with that of 1918-1919. During the forty-six weeks from June 23 to May 10, the total number of deaths attributed to the disease was 151,446, including 140,989 of civilians, the corresponding civilian death-rate for the forty-six weeks being at the annual rate of 4,774 per 1,000,000 population. Nor does the mortality attributed to influenza in all probability represent the total number of deaths caused by it, for allowance must be made for increases in mortality allocated to respiratory and other diseases but really attributable to influenza. When, for example, pneumonia, bronchitis, heart disease, and phthisis are included in the female mortality rate, deaths attributable to the epidemic during the third quarter of 1918 were 7,741, and during the fourth quarter, 62,240; the figures for males during the same period were 8,088 and 51,339 respectively.

It is interesting to observe that whereas in earlier years the mortality rate for influenza in England has been lower under the age of fifty-five years and higher above it, in 1918-1919 this was distinctly reversed; those under thirty-five died in great numbers, while those over fifty-five seemed to be relatively safe, although to all appearances the influenza of 1918 was essentially the same as that of former years. It would be difficult to find in the history of any other disease so complete and sudden a change of incidence. The opinion is expressed in the Registrar-General's report that although the alteration in the circumstances of the population, as in the case of the aggregation of young women in munition works in 1918, may account in part for the change in mortality incidence, it is more preferable that the explanation be found in a sudden change in the infecting organism rather than in the soil provided for its growth.

FIRST REGIONAL HEALTH CONFERENCE IN WASHINGTON IN DECEMBER.

THE first of a series of regional health conferences authorized by the International Health Conference at Cannes is to be held in Washington, D. C., December 6-13, 1920. It will be devoted to a consideration of venereal diseases which, according to conservative estimates, constitute one of the world's most terrible plagues.

The conference is being organized under the joint auspices of the U. S. Interdepartmental Social Hygiene Board, the U. S. Public Health Service, the American Red Cross and the American Social Hygiene Association. Professor William H. Welch of Johns Hopkins has consented to serve as president, and already assurances have been received that some of the foremost physicians and sociologists will participate. Prominent health officers and sociologists from all parts of North and South America will attend.

The conference will review past experiences and existing knowledge as to the causes, treatment and prevention of venereal diseases, and will formulate recommendations relating to a practicable three-year program for each of the North and South American countries participating. In addition it will make suggestions for putting such programs into effect.

In speaking of the proposed conference, Surgeon-General Hugh S. Cumming, of the U. S. Public Health Service, has said, "The United States is in the front rank of the countries which have organized against the Great Red Plague, and a consideration of the various measures which have proved of value in different communities will undoubtedly contribute much to further progress in the countries represented at the conference. More than any other important communicable disease, the spread of the Great Red Plague is inextricably bound up in a mass of social, economic, educational and recreational problems. The success thus far attending the campaign against the venereal diseases is due largely to the fact that this interrelation has been recognized and that the campaign has enlisted the coöperation not only of physicians and sanitarians, but of sociologists, judges, probation officers, educators, the clergy and good citizens generally."

MEDICAL NOTES.

HONORARY ELECTION OF DR. JOHN G. ADAMI.—Dr. John G. Adami, vice-chancellor of the University of Liverpool and formerly professor of pathology and bacteriology in McGill University, has been elected to an honorary fellowship in Christ's College, Cambridge.

DEATHS FROM CHILDBIRTH OR PREGNANCY IN ENGLAND AND WALES.—The following statistics relative to deaths due to pregnancy or childbirth in England and Wales have been published in the *British Medical Journal*:

"During 1918 the number of deaths assigned to pregnancy or childbirths was 2,509, corresponding to a rate of 3.79 per 1,000 births. If the classification be adopted which was in use up to 1910 there must be deducted from this number 156 deaths, which with one exception were allocated to puerperal nephritis and albuminuria; the mortality thus calculated is reduced to 3.55 per 1,000 births, as against an average of 3.74 in the ten years immediately preceding and 3.66 in 1917. If 2,529 deaths from enteric fever, malaria, influenza, pulmonary tuberculosis and other conditions stated to have been caused by or associated with pregnancy and childbirth be included, the proportion is raised to 7.6 per 1,000 births—a figure greatly in excess of those of previous years, which ranged from 1908-17 from 4.77 to 5.27. For this sudden inflation of a stable mortality influenza was wholly responsible; in connection with pregnancy or childbirth 1,620 more deaths took place from influenza and 225 more from pneumonia than during 1917. Of the 2,509 deaths assigned to pregnancy 54 were attributed to hemorrhage of pregnancy, 137 to placenta praevia, and 184 to other puerperal hemorrhage. Among other 'accidents of childbirth' to which deaths were attributed were: contracted pelvis, 35; Caesarean section, 19; rupture of uterus, 16; and inversion of uterus, 8. Under the heading 'Puerperal Fever' (845 cases) 478 deaths were ascribed to septicemia or sepsis, 98 to peritonitis, 21 to pyemia, 19 to pelvic cellulitis, 16 to septic phlebitis or septic thrombosis, and 7 to pelvic abscess. Deaths ascribed to puerperal convulsions numbered 388.

BRAZILIAN HOSPITAL IN FRANCE.—The Paris Faculty of Medicine has accepted the offer made by the Government of Brazil of the hospital

installed by Brazilians in Vangirard, France, at the cost of two million dollars.

PROPOSED INSTITUTE OF GENERAL PATHOLOGY AND PREVENTIVE MEDICINE IN OXFORD.—An appeal for funds is soon to be issued by the committee which plans to erect an Osler Institute of General Pathology and Preventive Medicine in Oxford, in commemoration of the services of Sir William Osler in Canada, the United States, and England. There are included in the committee representatives of the universities of Aberdeen, Birmingham, Bristol, Cambridge, Durham, Edinburgh, Glasgow, Leeds, Liverpool, London, Oxford, Sheffield and Wales, and also of the Royal College of Surgeons and Physicians, of the Faraday Society, of the British Association, and of the British Academy.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending August 21, 1920, the number of deaths reported was 175 against 174 last year, with a rate of 12.19 against 11.39 last year. There were 46 deaths under one year of age against 32 last year.

The number of cases of principal reportable diseases were: Diphtheria, 26; scarlet fever, 6; measles, 5; whooping cough, 33; typhoid fever, 2; tuberculosis, 41.

Included in the above were the following cases of non-residents: Diphtheria, 2; scarlet fever, 1; measles, 1; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 2; whooping cough, 6; typhoid fever, 1; tuberculosis, 6.

Included in the above were the following non-residents: Diphtheria, 1.

Infantile paralysis: Cases, 13; deaths, 3.

BEQUESTS TO HOSPITALS.—By the will of the late Daniel Dole Adams of Newbury, it has been provided that after the death of his wife the sum of \$10,000 is to be given to both the Anna Jaques Hospital at Newburyport and the Homeopathic Hospital at Newburyport. The income of these funds is to be used for maintaining a free bed.

NEW ENGLAND NOTES.

WAR RELIEF FUNDS.—New England branches of war relief funds have announced the following contributions:

French Orphanage Fund	\$614,344.80
Russian Refugee Fund	35,864.81

Correspondence.

[The following letter has been sent by the author to each of the Electors of the Hall of Fame.]

DR. MORTON IN THE HALL OF FAME.

Boston, June 18, 1920.

To the Senate of the University of New York.
University Heights, New York, N. Y.

Gentlemen:

Previous to October 16, 1846, surgical anesthesia was unknown. Hitherto surgical operations had been mental and physical torture to the patient as well as to the surgeon. Those unfortunate persons about to undergo an operation were plied with opium, alcohol and other drugs, restrained by attendants, bound to a chair, or lashed to the operating table. The operating rooms in the hospitals were located in the cupola, or as remote as possible, in order that the inmates of the institution might not be disturbed by the shrieks and groans of the sufferers. In consequence thereof, operations were comparatively infrequent, suffering was rampant and lives were unavoidably sacrificed. It is simply impossible for the present generation to realize or to comprehend the management of surgical cases in those days.

Upon that epochal Friday morning in 1846 these dreadful conditions were radically and permanently changed by the introduction of anesthesia. Painless surgery, as we know it today, was successfully demonstrated upon that occasion for the first time in public at the Massachusetts General Hospital in the presence of a representative assembly of physicians and students. At the conclusion of the operation, the surgeon, Dr. John Collins Warren, remarked to the intensely interested audience, "Gentlemen, this is no humbug!"

From that moment painless surgery became an established fact. Other operations, equally successful, speedily followed, and in a short time the great discovery was known and in use all over the civilized world.

The man who gave the anesthetic upon that memorable occasion at the Massachusetts General Hospital was Dr. William Thomas Green Morton. He had experimented with sulphuric ether, had demonstrated its safety and efficiency in dentistry, and sought an opportunity to show its efficiency in general surgery. He assumed the sole responsibility of the demonstration. The results, whatever they might be, rested upon him. His enterprise, his enthusiasm, and his courage brought success. Whatever suggestions or assistance he may have received from others, he was the man who made anesthesia a practical, everyday blessing to mankind. The one fundamental fact to be borne always in mind is that previous to Dr. Morton's demonstration of anesthesia, surgical operations were attended by indescribable agony, mental and physical; that afterwards, and as a direct result of the demonstration, they were, and always will be, accompanied by hope and comfort. To him belongs the credit of this great discovery. No man has done as much for the relief of the suffering of the human race.

The medical profession appreciated the importance of Dr. Morton's great service to humanity as no other class in the community is able to do, and the writer begs leave to suggest that his name be found worthy of a place in the Hall of Fame in New York by your honorable body.

Very respectfully,

Your obedient servant,

GEORGE W. GAY, M.D.,

Senior Surgeon, Boston City Hospital,
Ex-President, Massachusetts Medical Society,
Member of British Medical Association, etc.

FIRST AID TRAINING.

August 9, 1920.

Mr. Editor:

Permit me to present to you my most emphatic protest against any such article as appeared in your August 5 issue, entitled "The Increasing Need for First Aid Training" as being suggested by the Red Cross Society and endorsed by you.

As a class our business interests are left to take care of themselves in a manner never found in any other calling. We are being invaded on every hand by what I call "short cut" pirates—osteopaths, chiropractors, "healers" of numerous cults, and now you suggest the need of "first aid" helpers or what not. Pardon me, as one well versed in the affairs of village and country practice—no "armchair" experience either—if I say there is no need, increasing or otherwise, for such "first aid training" in our state as you suggest. True, physicians are leaving small towns and communities where once they labored, and in many cases there is a good and sufficient reason for it, but in these days of rapid transit via the automobile, these towns are more readily reached and served than they were in the days of the horse. Such a move as you endorse also has another dangerous feature in that it would be the entering wedge that would eventually destroy what "medical registration" laws we now have.

The bricklayer, the steamfitter is wiser in his generation than we. He guards the apprenticeship to his trades with jealous eye, admitting none until he feels him to be fully competent.

I am also in hearty accord with the article in the same issue on the administration of ether by *physicians only*. It seems to me your duty and mine is to protect the interests of the most obscure but reputable physician wherever he is found in this Commonwealth. Look over the lists of "first aids" already legalized in this state and see where it has taken the bread out of the mouths of our hard-pressed physicians. The list is too long to tire you with, but I feel sure it is well known to you.

I am not writing for publication but to enlist your interest in the men who largely support your JOURNAL. Get nearer to them in your work.

Sincerely yours,

GEORGE W. ELLISON.

THE NEED OF PROVISION FOR PRIVATE PATIENTS IN STATE AND MUNICIPAL HOSPITALS.

Boston, Aug. 18, 1920.

Mr. Editor:—

In these perplexing days, for our very rich and our very poor a fair hospital provision is made. For no less than fifty dollars a week can an acutely insane patient be cared for by private corporations or individuals. A very poor patient can receive in one of our public institutions the best care the state can provide with the amount of money at its disposal for this purpose. In some of the institutions a few dollars a week extra can be received and extra food, especially fruit, provided. At least, the disposition of these two classes of cases is fairly definite. There exists little perplexity in answering the question as to what shall be done with them.

In regard to our great middle class, our most responsible, honest, and intelligent people, the hope of our nation and the world, the situation is not clear. Too honorable to accept for themselves or those for whom they feel responsible free treatment, and too proud to be objects of charity, they try one of two equally disastrous plans: they keep their relatives at home or send them to private institutions. Soon they are worn out or their funds exhausted. Instead of one patient in a family, there may be several

and then, at a most uneconomic time, the state hospital is the resort. We should and could, if we would, do our duty toward this class of citizens.

In Germany before the war and in England today, there exists the provision which in earlier days we had in Massachusetts: a provision whereby self-respecting individuals might pay what they could and not be pauperized. If it is possible for the city and state to care for free patients, and for private hospitals to care for patients able to pay the necessarily increased prices, it is certainly possible for state and municipal hospitals to provide the essential care at the lowest possible rates for patients needing such care. It requires merely thought and adjustment to bring such provision about. There was much that was good in the better insane hospitals of Germany with their seemingly undemocratic classification, for, although there were often external appearances of inequality in favor of patients paying higher prices, the essentials of treatment needed for recovery or improvement were in most cases the same. There was less injustice in preventing those able and willing to pay a reasonable price than there is among us today.

Why would it not be beneficial to thus legitimately increase the hospital budget, thus allowing a greater number of better paid doctors and nurses? Do not the private departments of our large hospitals serve to keep up the grade and benefit the public as well as private patients, while the wider experience gained by doctors and nurses from contact with public patients act beneficially to the private cases?

This applies not alone to our insane hospitals, although here conditions make the need more imperative; acutely insane patients must for proper treatment have the accommodations of large hospitals or pay very high prices. There are many chronic cases too difficult to be properly treated in inexpensive private hospitals or nursing homes, so called. Should there not be provision for private patients in our municipal infirmaries? Would this not create a greater interest in such institutions on the part of our intelligent citizens?

I would not belittle the position of the private hospital or deny its usefulness in the community and I would especially commend the personal touch with the patient which in many cases is invaluable. However, the private hospital, like the private school, will never get to the root of our problems. It will always be for the few. For the good of the many we must make the best provision we can for adequate care with properly paid and not overworked doctors and nurses, possible for the many without undermining their independence, at least until such a time as that when an evolution of the medical world shall make such provision unnecessary.

MABEL D. ORDWAY, M.D.

PSYCHICAL RESEARCH.

Boston, Aug. 24, 1920.

Mr. Editor:—

My protest against Dr. J. Danforth Taylor's attitude toward psychical research has been registered. I have no desire to discuss with him either privately or publicly the subject of spiritualism, first, because of the very complex nature of the evidence, involving as it does many other supranormal phenomena, and second, because the profession would not be interested in our personal opinions. What should interest every physician and every man who thinks at all, is the opinions of such a large body of scientific men who have undertaken a *scientific* investigation of the whole subject. To their interpretation of this mass of evidence the medical profession should give respectful attention.

I did not see G. Stanley Hall's criticism of Sir Oliver Lodge and I do not remember reading anything from Newcomb one way or the other. Their opinions would have weight with me,—as have the

conclusions of other men of science, like Sir William Cookes, Alfred Russell Wallace and a host of others,—that the "stream of consciousness does persist." This is my last word on the subject.

DAVID W. WELLS.

SOCIETY NOTICES.

NATIONAL ANAESTHESIA RESEARCH SOCIETY.—The National Anaesthesia Research Society will hold its first annual meeting at Pittsburgh, on October 4 to 8, with headquarters at the William Penn Hotel. The meeting will be in conjunction with the Interstate Anaesthetists Society, the Western Pennsylvania Odontological Society, and the Medical Society of the State of Pennsylvania.

NEW ENGLAND SURGICAL SOCIETY.—A meeting of the New England Surgical Society will be held on October 6 and 7 in Providence, Rhode Island.

FRANKLIN DISTRICT MEDICAL SOCIETY.—Combined Meeting with Hampshire District Medical Society.

Change of Program:

South Deerfield, Lathrop Hotel, Tuesday, September 14. Ball game at 2.30 P.M. Paper at 4.30 P.M. by Dr. W. R. MacAusland of Boston: "Arthritis from an Orthopedic Standpoint." Supper at 6.30 P.M.

F. A. MILLETT, Sec.

RECENT DEATHS.

DR. ALBERT JOHANN HAHN, a practitioner of Plattenburg, N. J., and a Fellow of the Massachusetts Medical Society, died at Sharon, Vt., Aug. 1, 1920, aged 67 years. Dr. Hahn was born in Germany, Oct. 4, 1852; from 1880 to 1885 he was professor of medical chemistry and toxicology at the College of Physicians and Surgeons, Boston, in 1882, receiving the degree of M.D. from that college. In 1885 he was graduated from the Dartmouth Medical School and joined the Massachusetts Medical Society, soon settling in Newark, N. J., and later moving to Plattenburg where he had practised since.

DR. WALTER WESSELHOEFF of Cambridge, Mass., died at his home at Shawnee Hill, Sandwich, Mass., Aug. 17, 1920, aged 83. Dr. Wesselhoeft was born in Weimar, Germany, Aug. 29, 1838, the son of Robert and Ferdinanda Emelia Hecker Wesselhoeft. He was educated at the universities of Halle and Jena, entering Harvard Medical School in 1856 and being graduated in 1859. He settled in practice at Halifax, Nova Scotia, where he married Mary Fraser of that city in 1868. She died in 1886, leaving him with seven children. In 1894 he married Mary Alford Leavitt of Cambridge, who, with the seven children, survives him. During the Franco-Prussian War Dr. Wesselhoeft was surgeon in temporary reception hospitals at Mannheim, Germany, and at Prague and Vienna. After 1872 he practised in Cambridge, Mass.; from 1873 to 1900 he was professor of clinical medicine at Boston University School of Medicine, and then professor emeritus until his death. He was a trustee of the Massachusetts Homeopathic Hospital, a member of the American Institute of Homeopathy, the Massachusetts Homeopathic Medical Society, as well as corresponding member of the British Homeopathic Society, and the Homeopathic Society of Mexico.

During his lifetime Dr. Wesselhoeft joined his brother, Dr. Conrad Wesselhoeft, in trying to promote harmony between the homeopathic practitioners and regular physicians. He was a very accomplished man, of the Unitarian religious faith. For many years he was editor of the *New England Medical Gazette*, a position later filled by his son, Dr. Conrad Wesselhoeft, a practitioner of Boston who served overseas during the Great War, with the Twenty-Sixth Division.

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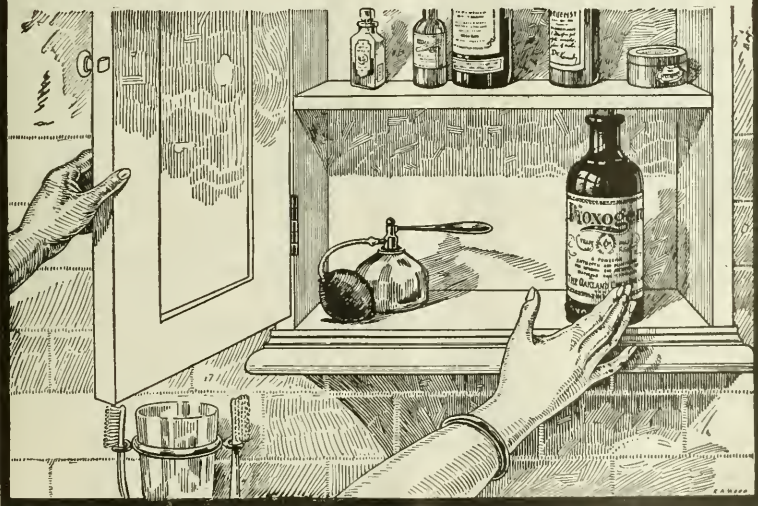
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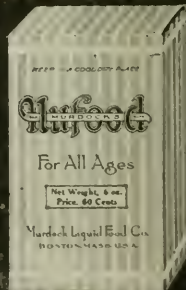


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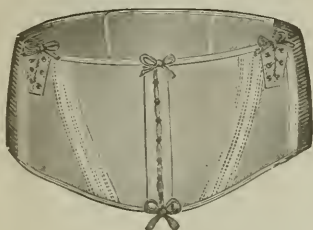
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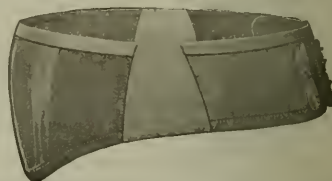


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